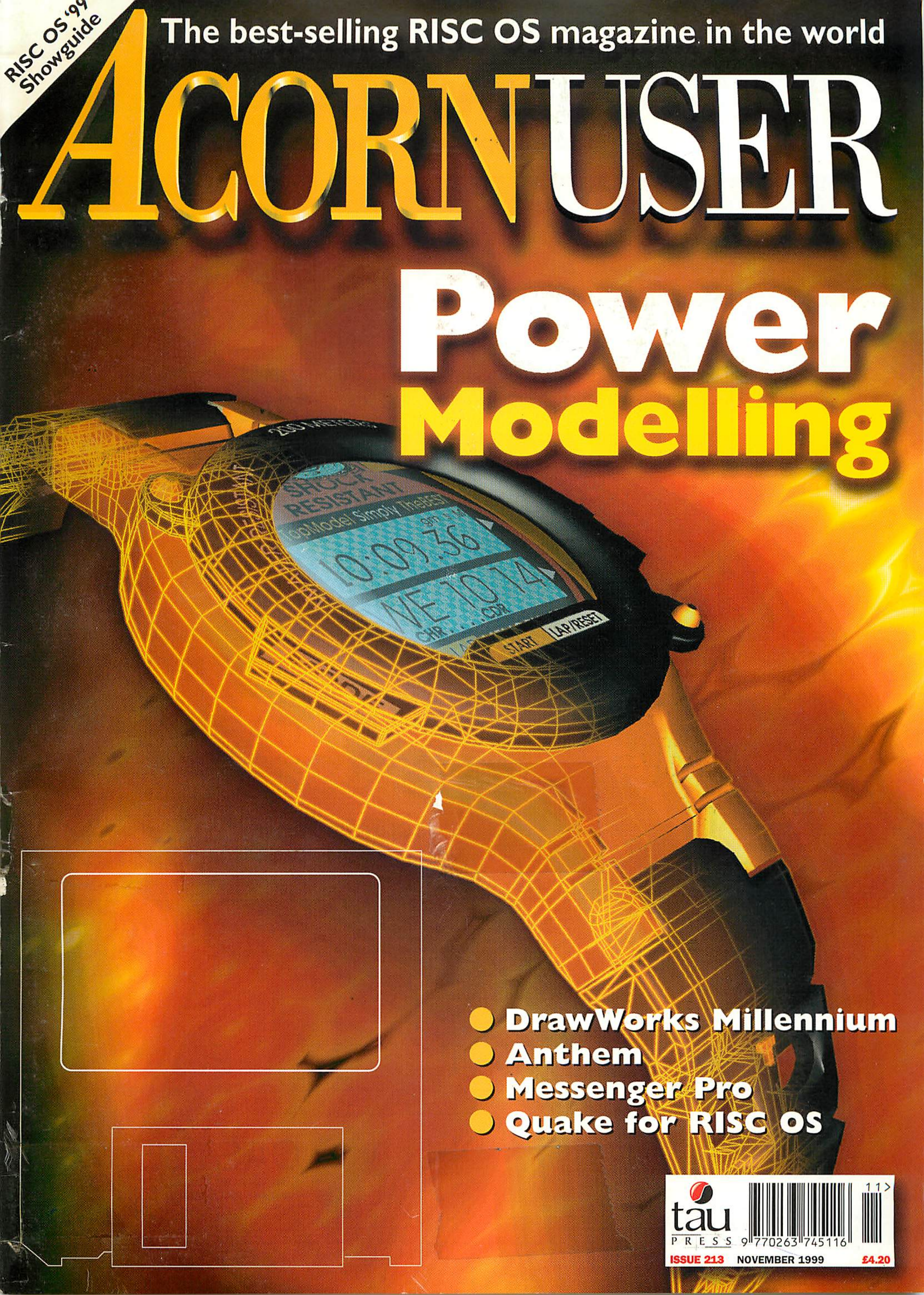


RISC OS '99 Showguide
The best-selling RISC OS magazine in the world
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Next month
Second half of the TopModel review; Digital cameras; Noticeboard Pro; Photodesk plug-ins; Compo and much much more
December issue on sale 28th October











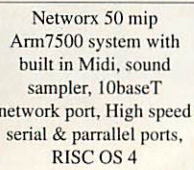
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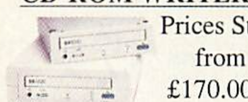
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600MHz StrongARM

Intel has started to make some noises about introducing next-generation StrongARM technology, calling it a 'quantum leap in performance without trade-offs in low-power capability.' Today's StrongARM processors deliver over 200MHz and draw just 650mW power. Intel say's the mid-range performer in its new StrongARM processor line-up will deliver twice the performance with one-third the power consumption, at 45 percent less voltage.

Intel will implement an ultra-low power 32-bit RISC architecture, helped by Intel's new 0.18μ fabrication process. 600MHz will deliver 750MIPS performance and yet the 500mW power consumption barrier will remain un-touched. The family will range between 150MHz, consuming 40mW power, to the 600MHz part consuming 450mW power, less than a tenth that of a typical Intel or third party Pentium compatible at the same clock speed.

Intel also point out that compatibility with the current ARM architecture has been agreed, suggesting that the new chips won't lack the 26-bit operational mode currently required by RISC OS.

If true, this is excellent news for the RISC OS market since the conversion from 26-bit to 32-bit addressing is the most serious problem facing the RISCOS Ltd programmers. It would mean that the existing operating system should work without further modification – giving more breathing space for the necessary future changes to RISC OS.

Next-generation StrongARM technology features the Intel Super Pipelined RISC Architecture implementation, including a seven-stage integer and eight-stage memory pipeline for dramatically faster processor clock rates. Integrated caches have been expanded to further enhance performance. 32Kb 32-way associative instruction and data caches and a 2Kb 2-way associative mini-cache will be implemented. These caches represent significant increases over the current-generation StrongARM architecture implementation.

The Internet and voice recognition are used by Intel as an indication of the importance of the new chips. Intel gives the example of a palm-size device capable of taking dictation. It requires about 250MIPS for voice recognition, enough all by itself to push the performance envelope of today's processors. Since it would be impractical for a single function like voice recognition to consume all of a device's available processing capacity, it's clear that more headroom is vital.

Among other applications, these performance advances will enable developers to build a whole new class of faster programmable, intelligent Internet access devices capable of simultaneously supporting multiple windows for TV and digital video content.

RISC OS in Rwanda

We've all heard the horror stories from the central African state of Rwanda in the news since 1994. Ethnic tribal rivalry resulted in the slaughter of possibly millions. At last the region is getting back to a semblance of normality, enabling various aid and redevelopment agencies to carry out their work there.

ExpLAN Computers of Tavistock in Devon, is well known for its Church links and the company's Paul Richardson was part of a five-person team from two churches in Devon who went out this summer to provide assistance to a group of churches headed up by Pastor Sadike Zacharie. They took with them an A4000 and an A7000 for use in producing small print-runs of Bible teaching materials. As far as he knows, Richardson successfully installed the first RISC OS computer in Rwanda. Apparently, there has been a rapid increase in the demand for Bible-teaching resources in Rwanda.

ExpLAN equipped the computers with their own *HolyBible* software in French, the official language of Rwanda. It's also possible the text will eventually provided in the native Kinyarwandan language. Requests were also made to other RISC OS developers for specific items needed. Every company approached gave the products requested, either free of charge, or at specially reduced prices. Computer Concepts gave two copies of Impression Style, EFF some keyboard drivers, Argonet offered internet software and David Pilling, fax and SparkFS software. Other contributions were made by Interconnex, IFEL and Castle Technology. Richardson was able to train about two dozen Rwandese to use the equipment, including a PostScript laser printer. "It's important to remember that they must continue to keep this system running," explained Richardson. "I have no doubts as to the ease of use and long lifetime of RISC OS computers and the laser printer will continue to operate for many years on the level of finance available in Rwanda."

Life may be getting back to normal, but there are still dangers to be faced: "We only got accosted by one bandit, and that was in the centre of the capital city. I think he was after the A7000 he spied on the back seat of the car."



Psion leaps to generation 7

Just a couple of months after announcing the refreshed Series 5mx, Psion has announced a new, bigger and more powerful StrongARM-powered sibling, the Series 7. Psion has also announced the opening of a Psion user-dedicated Internet portal at http://www.planet.psion.com, complete with free Internet service designed specifically for Psion users.

Since the Series 3/Acorn Pocket Book generation, Psion has now skipped two even-numbered generations. Number 4 was supposed to be considered unlucky in some Eastern countries – 6 has been skipped too. But the Series 7 itself looks rather familiar. In fact, it's a consumer-version of the Psion netBook which the company announced at the same time as the Series 5mx.

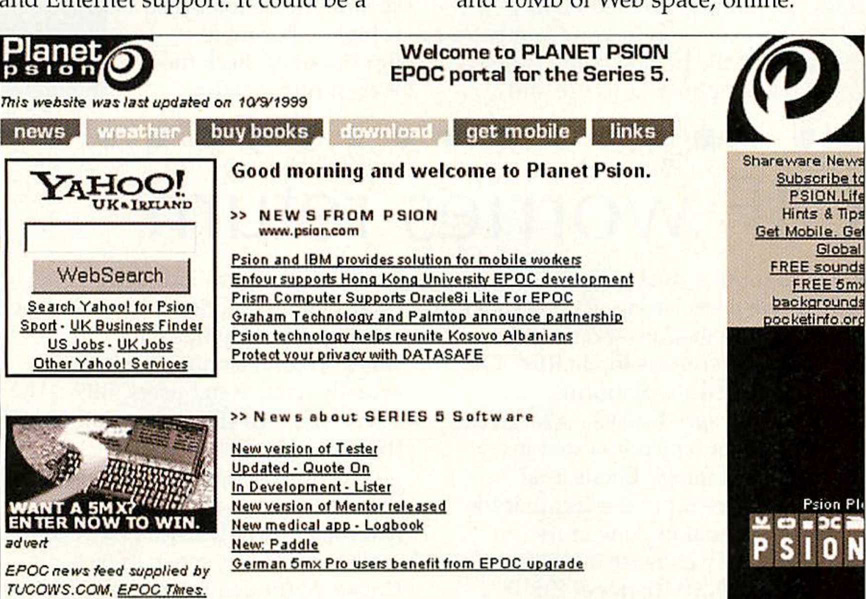
Both the Series 7 and netBook are larger than the Series 5, sport 60x480 resolution colour touch screens and are driven by StrongARM processors; the netBook gets a 190MHz SA and the cheaper Series 7 a 133MHz processor. You also get a full-size PCMCIA Type II slot and a voucher is included for a special offer on a Psion Dacom Gold Card PCMCIA modem. A Lithium-ion rechargeable battery pack is also part of the specification, which Psion claims will last two to three times longer than that in your typical notebook PC, which could translate into 6-10 hours of continuous use; the best part of a working day, if you like.

16Mb system memory is standard, expandable to 32Mb and along with the PCMCIA slot, there is a CompactFlash for extra non-volatile storage.

IrDA-compliant wireless infra-red networking is built in alongside a serial port. The Series 7 weighs in at 1.15Kg. At £699.95 inc.VAT, it is priced to compete with the mid-to-high end specification Windows CE market.

At the time of writing, the Psion netBook's price wasn't known, though estimates suggest £800+VAT. For the extra £140 (inc.VAT), you get nearly twice the processor power, 32Mb RAM as standard, plus Java and Ethernet support. It could be a tough choice between the two for some.

Meanwhile, Planet.Psion is a free Internet service for Psion users provided in conjunction with Line One, a fast-growing ISP in the UK. Slightly amusing is the fact that the Planet.Psion Web site is mostly designed in shades of grey and is devoid of design features, like frames, superfluous graphics and animations, which would tax Psion's existing Epoc Web browser. Planet.Psion will also function as a central news and information service for Psion users. Users can register with the service, which includes up to five mailboxes and 10Mb of Web space, online.



$13 million for E-14

Element14 Ltd – the company which likes to describe itself as "a start-up formed from the remains of Acorn Computers Ltd" – has raised $13 million in financing and revealed more details about its future plans to produce an innovative DSP (digital signal processor) chip family under the code-name of FirePath. The financing deal is said to be the largest for a chip-design company start-up in Europe. The company also speaks of its ambitions to emulate the success of ARM Ltd.

E14 will use the money for operational expenses as it expands its architecture and chip design teams in Bristol, where earlier this year the company acquired design engineers from the 64-bit Chameleon CPU design group of ST Microelectronics. "The simplicity of the architecture is the key. We're taking a RISC-like approach to the design of DSP," said Stan Boland, chief executive officer of Element14.

He added: "We've been assembling the company over the last three to six months by bringing together engineers from Acorn and a CPU design team from STM. It means we've got excellent silicon, software and systems expertise. The plan is to produce a chip in summer 2000 as an evaluation platform for the architecture."

Like ARM, E14 will design its chips but let others license the technology and make the final product.

RISC OS around the home

The great thing about having one is that a butler can be summoned to where you happen to be. This hints at why Octopus Systems has named its new home information system product "TeleButler".

The package combines Octopus Systems' *Caller ID* and *Teletext* products originally designed as separate Acorn computer peripherals and allows caller information to be displayed on any TV in your home using a dedicated channel.

A special "information channel" is generated by the computer and available on Channel 9. The system is able to display the caller's name and number when the telephone rings, the number dialled on any telephone extension in your home, the name of the person being called, when the telephone is in use and when the call has finished.

It can also display a customised TV and Radio guide listing your favourite programmes, plus other useful information you may wish to link to in other RISC OS applications. Octopus see the product as appealing to all sorts, but especially home workers.

The *TeleButler* system can be bought as a complete package priced £285 inc. delivery and VAT, or you can build it up item by item, though separately the total cost is higher. For more information, check the Web at http://www.octosys.co.uk/tb Octopus systems is on tel: 01473 728943

Home Information System 11:46/27
Octopus Systems Teletext+
TV Guide
18.00 STAR TREK - The Next Generation
19.00 WATCHDOG
21.00 TAGGART Final part.
21.25 HORIZON S/N features Acorn's new
22.30 NEWSNIGHT S
Caller ID
Thursday
09:08 01473-728943 Octopus Systems
09:31 01473-640000 BT Research
09:52 INTERNATIONAL
10:17 01354-680432 Apricote Studios
10:42 0181-231 9191 BBC Engineering
11:25 01473-270643 Tracey Skirrow
11:37 01223-725725 Acorn Computers
This display can appear on all of the TV sets in your home - see page 50 of the Teletext+ manual.

GIF worries return

We thought this story was dead and buried. We were wrong. It's back and it's beginning to scare some software developers and users in the RISC OS and other software platforms.

Five years ago, Unisys – a large US computer firm which invested in patented technology intellectual property, woke up to the fact that the Internet was making one of its patents rapidly increase in value. This was the LZW (Lempel Ziv Welch) loss-less image compression algorithm used in a variety of image-related application programs and image file formats, including the popular TIFF (Tagged Image File Format).

Even more popular than TIFF is GIF, commonly known as the Compuserve Graphic Image File format. GIF uses LZW compression and the GIF format, along with the JPEG format, forms the basis for Web page imaging on the Internet.

At the end of 1994, Unisys let it be known that they would be seeking licence fees from those people its legal advice had defined as commercially liable through the use of LZW compression in file formats like GIF. The announcement caused a storm of protest as it directly challenged the notion of the Internet as being a largely free entity. There was also confusion as to who was actually liable – end users, BBS operators, Web site owners: all feared the consequences.

The uproar seemed to cancel out the licence issue and once the noise had died down, Unisys' LZW claims were forgotten by most. In fact, Unisys continued to pursue its claims a little more discreetly, but targeted bigger firms like Microsoft and IBM. Now, five years later, Unisys has issued further press releases indicating that it is continuing to pursue un-licensed use of the LZW algorithm.

Unisys points out that it recently succeeded in defeating resistance from Corel Corporation, a major developer of graphics software, over the issue through legal action. Several hundred big name software companies have quietly paid their licence fees, but there are thousands of others and many can't afford the apparent minimum $5,000 charge. Many of these companies are in the RISC OS sector.

Unisys also warns that users' ignorance of their software's licensed status is no excuse. While stressing that most licence arrangements with ordinary end-users will not require any fees at all, Unisys still wants anyone using LZW-based technologies to check that their software is licensed. It reads a lot like veiled threats to any GIF user.

Five years ago, as soon as the original Unisys/LZW furore made the headlines, enthusiasts rebelled and invented their own, improved alternative to GIF and called it PNG – officially called Portable Network Graphics and cheekily nick-named PNG is Not GIF. It's a recognised Web graphics file format supported by many browsers, including some RISC OS ones like *Fresco*, Acorn *Browse* and *ArcWeb*, for example and it is totally free of any licensing concerns. PNG is widely supported, but GIF continues to rule alongside JPEG. Now maybe PNG will come to the fore after all.

For more information on LZW licensing, check http://corp2.unisys.com/LeadStory/lzwfaq.html

The official PNG Web site is at: http://www.cdrom.com/pub/png/

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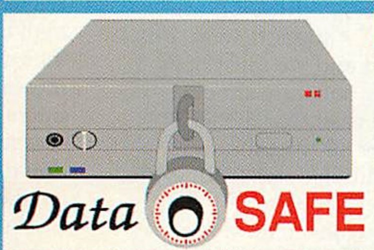
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Faster A7000+

Castle Technology Limited (CTL) has announced a faster A7000+ which incorporates the latest 50mips (million instructions per second) ARM 7500FE processor. The new A7000+ Odyssey benefits from raw processing power boosted by over 70 percent from the previous model's 29mips.

The extra oomph also translates into better screen mode options, ranging from a full 16 million colours in 640x480 mode, through to a 1024x768 mode in 32,000 colours and a huge 1280x1024 mode in 256 colours. Performance and usability also gets a boost through CTL's adoption of RISC OS 4 as a no-cost option to the standard RISC OS 3.71.

RISC OS 4 can, in certain circumstances, accelerate performance by almost 50 percent. Free bundled software includes Icon Technology's *EasiWriter Professional* and Colton Software's *Resultz* spreadsheet package.

The Odyssey is available in a number of configurations for networking, Internet access, and so on, with prices (without monitor) starting at £525+VAT. CTL is currently offering discounts on monitors until the end of November.

Customers who order a new Acorn computer (Risc PC or A7000+) from Castle, or one of its dealers, can choose a 14in monitor for an extra £50+VAT, a 15in unit for £75+VAT or a 17" monitor for £125 +VAT.

All these have digital controls and a 0.28mm dot pitch screen, plus a 3 year warranty. 14in flat screen LCD monitors are also available at £550+VAT.

Jack Lillingston, CTL's managing director, commented: "Castle have taken up the challenge to continue the development of the Acorn range of computers.

The Odyssey is just the first in a series of improvements that we have been working on. Castle will release details of further technological developments before Christmas 1999". CTL, tel: 01728 723200, fax: 01728 621179, e-mail: sales@castle.org.uk, Web: http://www.castle.org.uk

Wacom's pen and mouse

Acorn users have used Wacom graphics tablets for years. Now Wacom is widening its market from a core clientele of mainly professional graphics artists to the general consumer market with its new Graphire mouse and pen set. In the box you get a 1,000dpi A6 format graphics tablet, a cordless pressure-sensitive pen and a cordless mouse with a wheel button. The pen has 512 levels of pressure, which is half that of the more up-market Wacom Intuos tablet range, but still promises to satisfy the majority of uses.

The mouse has no ball or internal rollers to get dirty, so its operation should be smooth and glitch-free for life. Both input devices communicate with the tablet using a low-power radio communication system and neither require batteries.

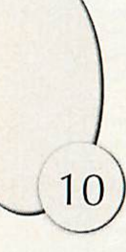
A choice of USB or serial connection is offered and the Graphire will be available from October, priced £84.99 inc. VAT.

RISC OS support software will be required and we must hope that the existing software support can be adapted easily for the RISC OS market. The UK distributor is Computers Unlimited, tel: 0181 358 5857. Wacom on the Web: http://www.wacom.co.uk

Acorn searches made easy

AcornSearch, is set to become the 'Yahoo!' of the Acorn world. It's a search engine dedicated to the Acorn/RISC OS area of computing. It can search through Web, FTP, and News items, helping to filter out other non-relevant material and return clearer results.

The engine itself now indexes over 7,500 items, over some 170 individual sites. Users can submit their RISC OS related homepages by sending an e-mail to g0tai@acornsearch.com with their website in the subject of the message. Developers may be interested to know that the engine scrapes the web pages for downloadable files (for the file search engine) and may wish to read the instructions provided at http://www.acornsearch.com/submit.html





Eizo's budget monitor

A year ago, you'd be doing well to find an up-to-date 17in monitor of any description under £200+VAT. Today, several manufacturers are offering models at nearing the £150+VAT mark. Eizo is not noted for budget-priced product, preferring to concentrate on high-end feature-rich models instead. But now the company has announced a budget model of a sort. The list price of the Eizo F520 is £239+VAT, which makes it a mid-price 17in unit.

However, you do get features which are unusual for this price point, including a short-neck tube which saves on space, 0.26mm dot pitch screen instead of the usual budget-priced 0.28mm specification and TCO '99 radiation emissions compliance. Maximum refresh rate at 1024x768 resolution is 89Hz. Options include a modular USB hub and add-on speakers and microphone. Eizo monitors are distributed in the UK by PDS, tel: 01483, 719500, Web: http://www.pds.co.uk

Game Boy ARMed and dangerous

It has been revealed that Nintendo has chosen an ARM processor to power its successor to the highly successful, multi-million seller, Game Boy hand-held pocket game console. Code-named Game Boy Advance, the new device is designed to be configured with the aid of add-on modules as a mobile phone, providing Internet communications for software downloading and e-mail. A digital camera add-on is planned too.

Multi-player real-time games will include the ability to see the face of your opponent. The new Game Boy will have the capability of running current Game Boy games using an emulator, but new games specially developed for the 'Advance' unit will not be backwards compatible with the existing Game Boy.

A special feature will see the new Game Boy working in tandem with Nintendo's still-secret next-generation 'Dolphin' home entertainment console. The 'Advance' unit itself will have a 240x160 pixel TFT LCD display, have a capacity of 20 hours of continuous use and weight about 140g. Don't hold your breath, however, the first production units, which will ship in just less than a year's time, will be for Japan only, though the rest of the world is scheduled for Christmas 2000.

Vacancies at Oregan

We've mentioned their recruitment needs in the news pages before, but Oregan Networks Ltd continue to have have several full time job vacancies for software engineers with RISC OS experience. According to Oregan, positions available will require working on-site at the Oregan Networks Leicestershire offices, with involvement in a number of Internet STB (set top box) related projects.

Qualifying for the jobs is quite tough: At least a BSc/BEng Degree within a suitable discipline, excellent knowledge of C and the Acorn or ARMTools compilers, experience of developing RISC OS-based WIMP applications, some experience of porting C code to the RISC OS platform and some some knowledge of Unix, networks and Internet technologies is an advantage.

If you're interested, e-mail nbourne@ oregan.net, or telephone 01530 563311.

In brief

Freeze your machine

Having been involved with Acorns for longer than I care to remember, sometimes, this news item reminded me of those wire-infested gadgets for your BBC Micro you used to be able to buy in order to stop games at critical moments, change the lives memory value to 'infinite' and then proceed to become a champion Elite player or suchlike.

Like Arm's Tech's new product, called *Freeze*, these games cheat devices were designed around the ability to freeze the state of the host computer and then enable the entire memory contents to be saved out as a file and tampered with as necessary.

Freeze can save the state of a machine and restore it back at any time, but Arm's Tech appears to have developed the application more for convenience than games cheating. Using Freeze, a long boot sequence can take less than 5 seconds. You can, freeze as many different sessions as you like and re-load them when needed. Freeze is a shareware program and the full registration costs £10. For more information, contact Arm's Tech via the Web at: http://aglaee.imag.fr/ArmsTech/GUS/Freeze.html

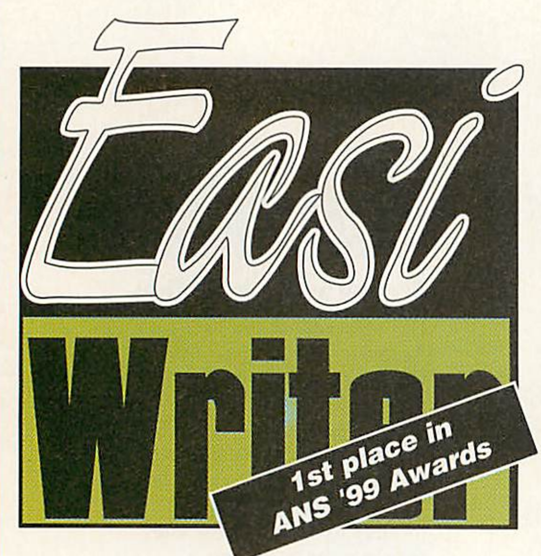
David Watkins

It is with sadness, shock and surprise that we have learned that Dave Watkins, who was the last editor of *Archimedes World*, had passed away. Dave was a familiar and enthusiastic figure among the small band of people who make up the core 'Acorn press'.

He endured a difficult time keeping *Archimedes World* going while its then publishers were negotiating to close or sell it. *Acorn User's* own publishing company, Tau Press, eventually acquired the magazine and it was merged with *Acorn User*. We will miss Dave's thoughtful but laid back presence at press meetings. Our thoughts are with his family.

Icon Technology

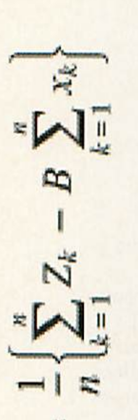
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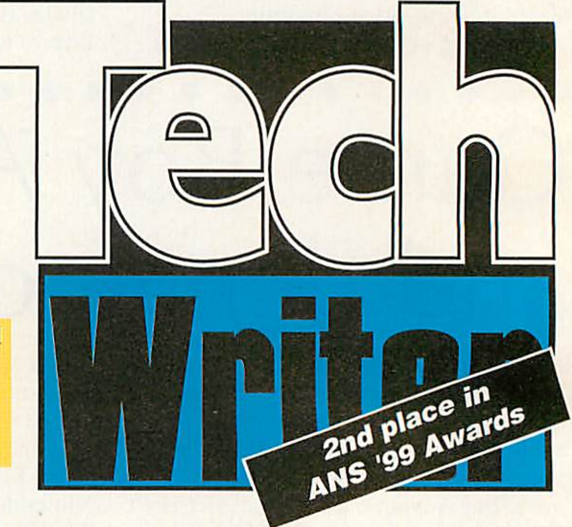


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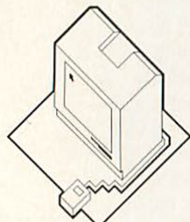
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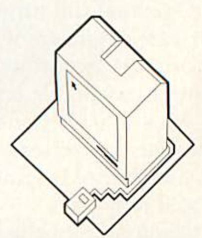
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Net gains and losses

Andover.Net operates Websites offering on-line Internet resources for Website builders. It also hosts the advertising space that pays for free use of these tools. Their Internet traffic report monitors the flow of data around the world checking response time and packet loss, expressed as a Traffic Index. Get it at http://www.InternetTrafficReport.com

The MediaBuilder site offers free clip-art, animated GIF library, icons, borders and backgrounds, as well as free *TrueType* fonts and image creation tools. The 3D Text Maker at http://www.3DTextMaker.com/



A bit more work needed perhaps?

can produce headlines and banner graphics which can be edited and tweaked in another online tool called *GIFWORKS*, which for Acorn machines needs a *JavaScript* Browser such as *WebsterXL* or *Fresco 2.03*.

Button Maker can convert an existing Web-published image into a bevelled button with an optional sharp drop shadow. Animated banner GIFs can be created with your own text with a number of moving effects. Their Dingbats font face mapper needs using with care, as its HTML won't display correctly on an Acorn Browser. If you must use the face attribute, only use <FONT FACE="Arial,Helvetica">, as no other fonts can be expected.

MediaBuilder offers an interesting selection of browser-independent tools for Web graphics creation, but the image quality isn't brilliant, and most actions take quite a time to achieve. Much better results would probably be obtained using one of the low-cost packages such as *DrawWorks* for Acorns or *Xara3D* and *WebStyle* for the PC.

Andover.Net MediaBuilder
http://www.mediabuilder.com

YoUR List of sites to visit

http://www.alant.demon.co.uk
Alan Brown's Postscript Printer Description files for distilling pdf files, his Acorn software and Simpsons guide.

http://www.archchancellor.demon.co.uk/
Edward Noakes' RISC OS software and coding tips, his selection of other authors' Acorn software and Angband links.

http://www.suit-u-sir.com/riscos/ comp.html
The computer adventures of Simon E. John, including his JavaScript digital clock, Perl and Java demos.

http://www.bitsmart.com/acorn
Bryn Evans' collection of scripts and information for using Acorn *!Connect* with free ISPs, also Interesting sites for Schools.

http://mars.spaceports.com/~kez/
Kez's Corner (thankfully not Korner); Kerry Floyd's site includes Acorn games to download, desktop sillies and Java chat page.

http://welcome.to/benbrook/
Ben Brook's site contains images and info on the range of Acorn machines, links and a beginner's guide to Acorns.

http://www.bravenet.com
Free tools for Webmasters including Web forums, reasonably discreet hit counters, guestbooks, mailing lists and E-mail forms.

http://www.argonet.co.uk/mabel/programs/html3/
!HTML by Richard Goodwin is a very comprehensive macro-inserter for creating Web pages with your favourite editor.

Contacting AU

David Dade at:
comms@acornuser.com

In brief

More Net-work

During the day Ian Jeffray designs digital set-top TV software, but his home interests include Formula 1 Grand Prix, *ARM Linux*, and writing Acorn software. His FreeUK Web site features well-illustrated information on setting up small home Ethernet networks with Acorns and PCs. Topics discussed on his "Basic home networking" pages range from choosing cable types through allocating IP addresses to networking software configuration of both Acorns and PCs.

Basic home networking
http://www.jeffray.freeuk.com/networking.html

Keep track with Camtrack

Hans de Jong plays a lot of tennis, but his other leisure moments in The Netherlands are taken up by RISC OS programming. CamTrack is his latest project, which fetches and stores images from WebCams – those peeping Internet eyes that show you what's happening right now in places all over the world.

Camtrack initiates periodic Web fetches and stores the images where you want them. In concert with David Thomas' *NetFetch* and your Internet software, up to 50 separate WebCams can be scheduled. There's a good selection at "Around The World in 80 Clicks" at

http://www.steveweb.com/80clicks/index.htm.

CamTrack
http://home.planet.nl/~hjng

Security breach

There has been much recent e-discussion about Secure Sockets Layer connections; the encryption of data sent via Web browsers for e-commerce purposes. UK-based users of Acorn *!Browse* have the 40-bit standard, but the full 'strong' 128-bit encryption is not available. *ANT© Suite* and *Voyager Fresco©* owners have been champing at the bit for any level of secure transfer. You can test the strength of whatever SSL version you may or may not have 'found', at a number of Web sites including the Harvard University FAS site at

http://www.fas.harvard.edu/security/test.html



iSV Products

Acorn User Awards 1995
Best product
runner up - PublishART



Acorn User Awards 1995
Best business software
runner up - TableCalc

Acorn User Awards 1996
Best network software
runner up - SerialNET

Acorn User Awards 1997
Best graphics software
Winner - DrawWorks2

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"...a Vantage beater..." Christoper Jarman

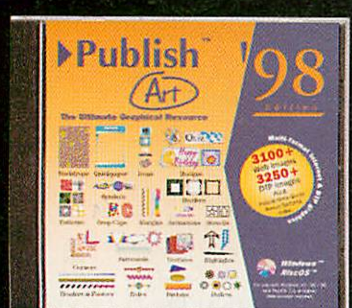
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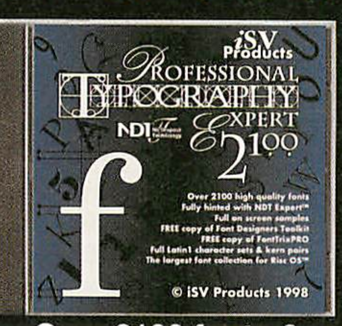
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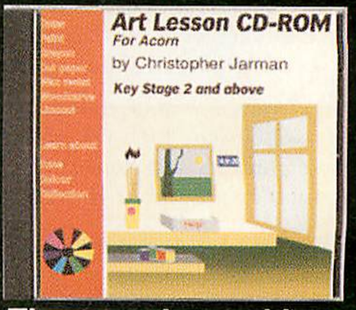
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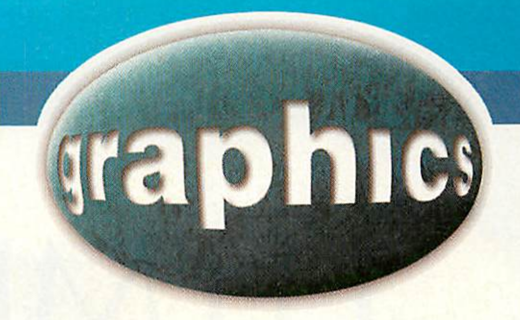
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Graphics back

Well, after a break of a few months, the graphics page makes a welcome return to *Acorn User*, with a new column editor at the helm. In fine tradition, I'd like to start things off with a brief introduction to myself. I'm Andrew Green, RISC OS user and graphic designer, in that order.

I run a graphic and Internet design agency, *Article Seven*, based almost entirely around an antiquated-but-lovely Risc PC machine. I'm not alone in doing this – it's always refreshing to hear of other graphic designers working with RISC OS equipment, many with great success.



The focus of my business is, admittedly, Internet design, meaning that for some tasks (CSS and Flash to name the primary two), I need to resort to using a PC. It's an uncomfortable experience: I find the RISC OS development environment second-to-none, which is why I choose to only use alternative platforms when I absolutely *have* to.

Article Seven is just over two years old now, which I'd like to think constitutes proof that it is possible to run a professional graphics business without needing to be Macintosh-based. And, despite the loss of Acorn, I can't help feeling that the next few years are likely to prove very interesting for RISC OS graphic design, with the eventual release of *Cerilica Vantage* and Millipede's new *Imago* motherboard.

If RISCOS Ltd can secure a future for our operating system, engineering for hardware independency and the ability to use faster processors than the current StrongARM, the platform could well find a new niche in this very market, which in turn would be extremely good news for the whole RISC OS community.

Vantage progress

It's painfully slow, but there are signs that a finished release of *Vantage*, the new vector art program for RISC OS, is finally on the horizon.

Pre-release copies have been available for some time now, but these lacked several key features which prevented the package from being truly comparable, in design terms, to its only real rival, *ArtWorks*.

Although many of the features promised by the application have been written and working for a while, it's apparently been a slow process to incorporate them smoothly into the package proper, and to provide a full user-interface for them. One example is *Vantage*'s graduated fills. Most art packages allow fills to graduate from one colour to another, and some allow more than two colours to be used in the fill.

I've yet to see one that can perform such a blend using anything other than a straight line – except Vantage, which allows graduated fills to follow any curve you like, and radial fills to use shapes other than simple concentric circles.

Watch this space.

Cerilica Ltd
http://www.cerilica.com/

In brief

Publish Art

iSV Products have acquired the distribution rights to the *Publish Art* clip art library, following the closure of its previous distributor, *Smart DTP*. The library features over 15,000 images, in a variety of vector and bitmap formats (all RISC OS compatible, of course), and costs £20 for a single-user license. More information can be found on the iSV Products Website.

http://members.aol.com/isvproduct/

Print and publish

Micro Laser Designs have launched an electronic mailing list for those involved with, or interested in, printing and publishing using the RISC OS platform. The list covers many design-related issues that aren't necessarily specifically concerned with printed media, and has already found a comfortable niche alongside the likes of the *Photodesk* users' list and the *Ovation Pro* users' list. To subscribe, e-mail *listserver@mld.co.uk* with *subscribe print+publish* in the subject line of your message.

Your work here!

One of the most pleasurable aspects of RISC OS culture, for me, is the sense of community it affords. To that end, I'd be more than happy to mention any on-line portfolios of work any of you have – just e-mail me the URLs or write to the *Acorn User* office.

Similarly, I hope to be able to kick-start the *Pic of the Month* feature again: let's see those entries coming in. The prize of *Phantasm* is no longer available, so printed offerings will receive a £10 cheque instead.

Contacting AU

Andrew Green:
graphics@acornuser.com

HTML3

By far the most actively pursued aspect of computing these days is the Internet; The Global Information Super Highway. Sometimes however, Acorn users must be wondering why they seem to be stuck on the hard shoulder while Bill Gates' station wagon rushes past in the fast lane.

Luckily there are a great many enthusiastic RISC OS programmers writing Internet utilities and applications to make life slightly more luxurious for Acorn owners. Of course, the more people who become 'wired up', the more people think they'll have a go at producing their own 'home page' on the World Wide Web.

Some die-hard Internet boffins might argue that coding in raw HTML (Hyper-text markup language – the language of the WWW) is relatively straightforward and the only 'real' way to write web pages. It can however, be daunting to the novice newcomer and even some of the old die-hards can come unstuck when trying to remember the syntax of that elusive or obscure tag.

Although RISC OS users haven't gained the sophistication of large scale packages such as *DreamWeaver* or *PageMill* on other platforms, there are a number of excellent utilities to make life that little bit easier for RISC OS web designers. One such utility which deserves a mention is HTML3 by Richard Goodwin. Richard is a professional web designer – and like all serious programmers decided to write an application to make his job easier – thus the birth of HTML3.

The idea behind HTML3 is simple; It's essentially a macro inserter containing a vast library of useful and handily organised HTML commands. Being a macro inserter means that it works in conjunction with your favourite text editor (in which your HTML is written) and simply inserts the relevant tags or commands as if you had typed them from the keyboard.

It's difficult to explain all the features of an application this comprehensive in a limited space, but you'll find that just about every combination of HTML design is catered for, ranging from tables, form creation, links, image insertion, entity insertion and a comprehensive selection of styles, fonts, colours and effects. There is also support for server side includes (SSI) management and third party addons – although Richard has thought of most options himself.

As can be seen by the range of options in the 'effects' window (below) – and this is just one of several comprehensive control windows – virtually every aspect of web design is catered for, including a range of preset functions to simplify complex effects.

The accompanying picture demonstrates two of the preset effects showing colour and size variations using a user defined sentence of text. The resulting raw HTML code is also shown in the larger *Zap* window.

A lot of HTML consists of shared routines so that you can combine different styles or effects from a common pool of pre-defined sources. For example, many of the text input fields are accompanied by a little 'claw' icon, allowing the text to be grabbed from other sections of HTML3 or from custom presets – such as your e-mail or web address.

The effects window.

HTML3 is a worthy addition to any collection of RISC OS Web design tools and makes an ideal mid-way complement between hand-designing Web pages using a text editor and some of the more powerful, but ultimately limiting, WYSIWYG page layout editors.

HTML3 is available to download from Richard Goodwin's site at http://www.goodwin.uk.com/richard/programs/

Tidbits update

As mentioned in the September issue, an impressive looking spreadsheet called *Isis* is being developed by Nicholas Marriott of Alpha Programming. As I write, a second RFC (Request For Comments) version has just been released. Nick has obviously been busily coding for the past few months because it has loads more features and options than the original version. Keep an eye on http://www.alphapro.demon.co.uk/Acorn/isis.html for updates.

Another useful little app I have permanently installed on my computer has recently been updated and is even nicer than the original is *MoonTool*. This is a simple little application which displays the current phase of the moon in a small window.

Phases (UTC)
Last New Moon 11:09 11 Aug 99
First Quarter 01:47 19 Aug 99
Full Moon 23:49 26 Aug 99
Last Quarter 22:19 2 Sep 99
Next New Moon 22:03 9 Sep 99

It's a new moon as I write this. However, the latest version – updated from Eduoard Poor's original by Musus Umbra, aka Adny Umbra, includes several new features, most notably the fact that the moon is now displayed from the correct viewpoint for the northern hemisphere (Eduoard lived in New Zealand).

Download it now from http://www.argonet.co.uk/users/musus/ and check out when the werewolves will start howling…

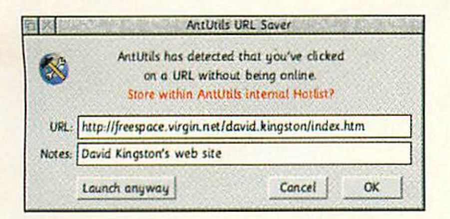


AntUtils

One of the benefits of writing this column for *Acorn User* is that I can occasionally give myself a gratuitous pat on the back and take a look at one of my own applications. A lot of people ask me about this application so I thought it was time to explain some of the thinking that went behind it and to reveal some of the features that casual observers might have missed.

AntUtils originated from my wish to make the ANT Internet Suite (AINS) that little bit better and fix some of the shortcomings in the early versions. As I'm one of those eager people who tend to check e-mail about every five minutes while I'm online web browsing – in the hopes that someone might have sent me a message in the few short moments since I checked the last one, I initially wanted an application to automate this process and tell the suite to fetch e-mail every, say, five minutes and newsgroups every ten.

ANT's official recommendation at the time was to set up task alarms using the standard *Alarm* application but I disliked this because it was less than elegant and could sometimes throw up un-friendly errors if the ANT Suite wasn't actually loaded when it decided to activate the task alarm.



Over the following few months it evolved into a general purpose application to handle anything I thought was remotely Internet-related – as can be seen from the choices window:

This is far removed from the original version which only had the two options for checking mail and news. It can now work across a LAN, automatically quit itself when the AINS quits, work with *Pluto* as well as *Marcel* and even attempt to fix some of the DLL crashing problems that early versions of the AINS suffered from.

The current version is also capable of toggling on and off Javascript in the latest version of *Fresco*, as well as altering *Fresco*'s identification text in an attempt to fool "designed for Microsoft Explorer" Web sites into allowing access to RISC OS users.

I've also added a feature for quickly creating an HTML page containing graphics images in a specified directory as thumbnails. I've tried to make the whole thing as flexible as possible – simply because I know most people like to tailor their Internet requirements to their individual needs.

Another criteria for the application was to make it as small as possible so that it can still be used on older machines with only 4Mb of memory. When I have needed to increase the wimpslot size to accommodate a new feature, I've usually added several other new features as well so as to get the best 'value for memory', so to speak. One of the newest features (and one, with hindsight, I don't know why I didn't add ages ago) is the ability to enter some text and *AntUtils* will automatically launch *Fresco* to take you to any of up to 15 different (user definable) search engines on the Internet.

Another new feature is what I call "URL capturing when offline". Basically this allows *AntUtils* to intercept a click on a URL, perhaps in an e-mail message, when you are offline and give you the option of storing it for later examination or to attempt to load it anyway (just in case you visited it just now and it's been stored in *Fresco*'s cache).

Although most of *AntUtils*' features are customisable from the choices window, more advanced users can edit the 'messages' file within *AntUtils* itself. This will allow you to edit things like whether or not you can have multiple copies running, the action of the select and adjust buttons on the icon bar, whether or not to perform an immediate news or e-mail check as soon as *AntUtils* is loaded, or a host of other lesser used options.

No doubt by the time this issue hits the shelves I might have added yet even more features, so whiz along to http://www.vigay.com/riscos/comms.html to download a copy – and get those suggestions coming in if you have any more ideas that I may have missed out.

Help2

Another useful application to undergo an overhaul in the last month is *Help2* by Rik Griffin of Squeaky Software. This is a replacement for the interactive Help application originally supplied with RISC OS.

The biggest benefit over the original is that the help text is displayed relative to the cursor position rather than in a bulky window. This works in a similar way to the Windows help system on "computers that we don't talk about". Again, loads of options allow you to set it up exactly how you want, changing the font style, size and background colour.

One very useful feature is the ability to filter out help requests from common applications such as *Zap*, Filer windows or any other application that you're familiar with. This makes it much more appealing to people who want the occasional help on more complex applications while avoiding the irritating message that pops up when you're trying to type some text into an editor window.

Help2 can be downloaded from http://www.cheesey.demon.co.uk/help2.html

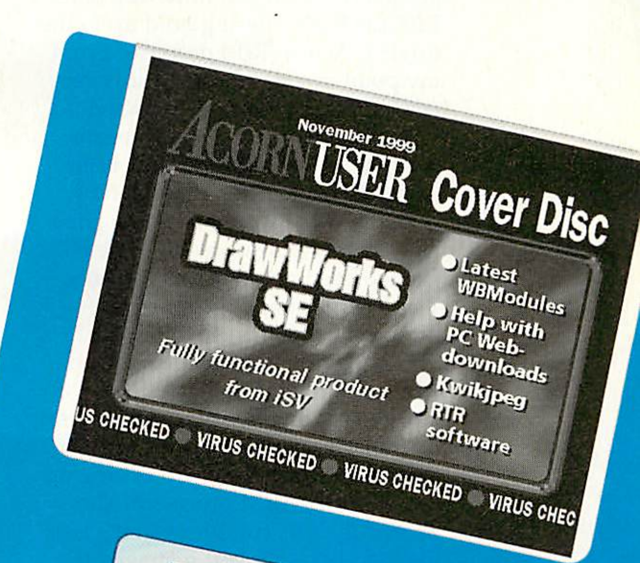
As always, these and more RISC OS applications can be found by visiting my comprehensive RISC OS links page at http://www.vigay.com/riscos/links.html

Contacting AU

Paul Vigay:
pdpage@acornuser.com



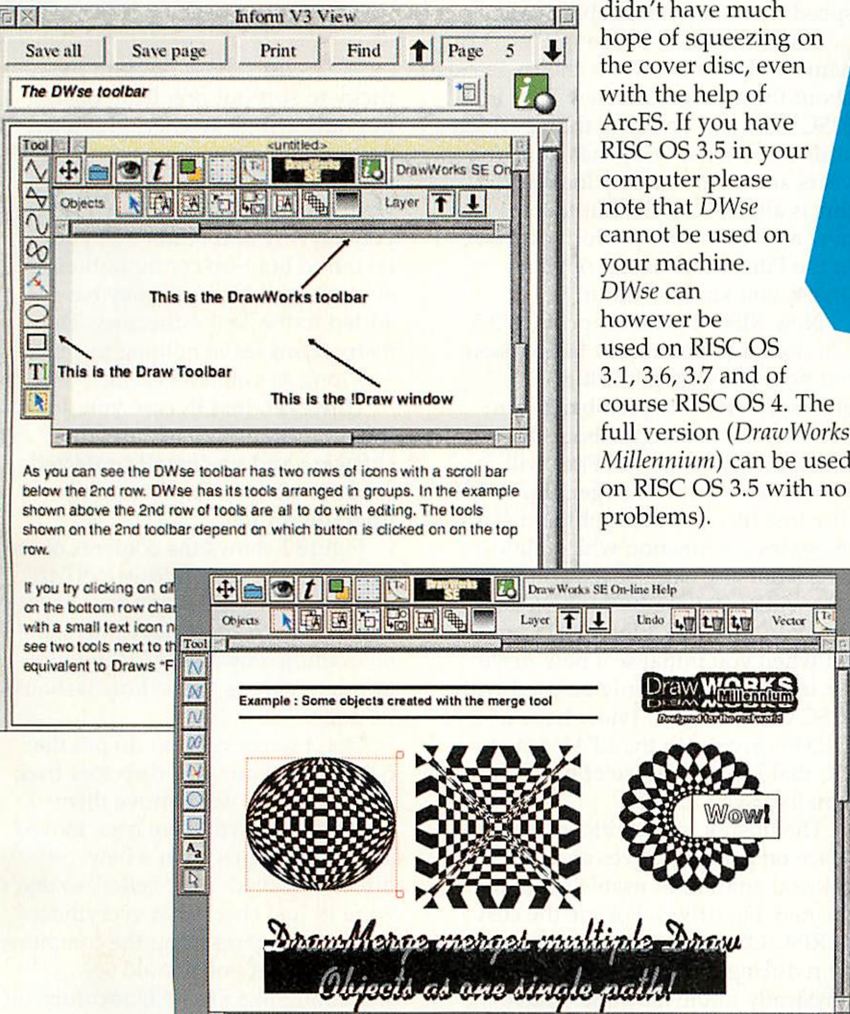
DrawWorks SE



DrawWorks SE (*DWse*) is a bolt on addition to *Draw*, and is a cut down version of *DrawWorks Millennium*, iSV's professional level graphics package.

DrawWorks Millennium itself is reviewed on page 48 of this month's magazine, and in an effort to enhance the review iSV were kind enough to provide this cut-down version of their software. This is a fully functional program, complete with saving and so on, but it is obviously lacking some of its larger brothers features.

DrawWorks Millennium is supplied on CD and is over 420Mb in size, so I didn't have much hope of squeezing on the cover disc, even with the help of ArcFS. If you have RISC OS 3.5 in your computer please note that *DWse* cannot be used on your machine. *DWse* can however be used on RISC OS 3.1, 3.6, 3.7 and of course RISC OS 4. The full version (*DrawWorks Millennium*) can be used on RISC OS 3.5 with no problems).



ArcFixer

This program, by Paul F. Johnson, is really for people who do most of their Web downloading on a PC. Some Websites still use the standard Acorn extensions for archives such as .spk and .arc. While these cause no problems for Acorn browsers, it's a different story on most PCs.

When IE or Netscape hit these extensions, they normally download to the screen a pile of gibberish which can't be dearchived.

This small command line program fixes these gibberish files into something which *SparkFS* (and presumably *ArcFS*) can handle. Just download the archive and save as text – very neat

Disc information

The software on the cover disc has been compressed using *ArcFS 2* from VTi, and are opened by running a copy of *ArcFS* then double-clicking on the archive to open it. There is a copy of *ArcFS* on each disc. Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to Acorn User, Media House, Adlington Park, Macclesfield SK10 4NP.

The *Acorn User* cover discs have been checked for viruses using *Killer* version 3.001 from Pineapple Software.

Steppi the

I t was almost a year ago that I first road-tested the emerging RISC OS 4, and now the world is a very different place – even the sprites have changed. After so long a gestation period just how well does RISCOS Ltd's offering hold up to the original Acorn (RIP) promise? From my point of view the answer is very well, in fact better than expected.

Every upgrade has it's problems and yet even though I've only been using the new OS for a month now, from the start I would not have gone back to the old system – this one is just too good not to use all the time. This article is not a review of the product as that it is too big a task. This is a guide to getting going and why it's a good idea to do so.

The task of upgrading the chip set is similar to, but less problematic than that of installing and setting up a new StrongARM processor. The procedure is as complex but it's less likely to fail, so if you managed the StrongARM upgrade by yourself you can expect to handle this too.

A few questions

Do you have a CD-ROM drive? All the software is on a CD and so without one you won't get anywhere. CD-ROM drives can be had for £30 or so, which means that now would be a good time to get one or even upgrade to a 48X speed device. (Though these fast drives do tend to whine and take longer to get up to, and slow down from, their top speed). Speed is not a problem for the upgrade task however, my 2X speed drive had no trouble at all.

Do you want to use long file names? Here you have a choice about the answer. The new Filer in RISC OS 4 can do many things which adds on to what OS3.7 has done for years and at first it may look as if this is all OS4 can do, but there is a new and massively powerful feature in the Filer which is not obvious unless you know about it.

New RISC machines, post OS 3.5, can use large discs (very large discs), but not at anything like high efficiency. In the September *Acorn User* I talked at length about the LFAU and how the old Filer will allocate a larger and larger chunk of disc to a file as the size of the drive increases – a function which almost wipes out any extra space you think you will be getting by fitting a large drive. In RISC OS 4 the LFAU can be set when you initialise a new drive for use (it can then only be used with RISC OS 4 though). I now have a 17.2Gb drive with the LFAU set at 2K, that is half the size of most 'small' drives' LFAU.

The upshot is a terrific increase in space on existing drives and a colossal amount of usable space on the new big drives. For me the cost of RISC OS 4 is covered twice over by reducing the number of drives physically in the machine. I have even been able to remove my backplane – thus further reducing the load on the power supply and increasing its life expectancy at the same time.

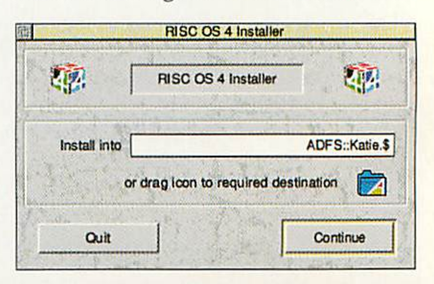
Starting work

As with the StrongARM upgrade the software side of the upgrade must be done first, but before doing anything, check that your system already works perfectly. If the machine has problems before the upgrade it is tricky to sort out pre- from post-upgrade errors. To check that there is nothing wrong with your hardware you can simplify matters by doing what the install program will do for you anyway and remove *all* your favoured boot-up configurations and everything which you may have added to the Tasks directory. The instructions leave nothing to chance – as long as you read them.

However, just in case you don't, it is important to back up your software and un-install protected programs before you start the upgrade proper.

Figure I shows the contents of the CD. Double-click on *!RO4INSTAL* and you will see the window below which is self-explanatory and should be examined by any PC Windows upgrade writers to see how it should be done.

Don't whatever you do put the contents of your task directory back yet. If you did not remove them yourself they will have been moved anyway and placed in a new directory called *'InactiveRes'*, so don't wipe it! Just check that everything still works by resetting the computer, for a moment you should see something like Figure I, next turn off again. The big shock here is the new start up screen. Acorn is dead, Pace live. Assuming all is well it's time to



A new disc

Choose your new drive with care, it is probably a good idea to avoid Western Digital drives as they have had problems in the past coping with earlier RISC OS filing systems.

As far as I am aware any other type of IDE drive will do. I know little of SCSI drives, but IDE is far less expensive, is what the machine uses normally and it is very fast these days.

The installation CD comes with a new version of *HForm* which gives the option of using long filenames. Harddiscs always come pre-formatted and so you only need to use the 'Initialise' and not the 'Format' option to get them going – even when changing the settings.

For large drives enter 9999999999 or larger for the number of cylinders as there is still a bug in the software which RISCOS Ltd does not have the licence to fix as yet. If you just accept the default numbers which *Hform* gives you then you will 'only' be able to format drives up to 7Gb or so.

ng up pace

Simon Anthony installs RISC OS 4

do the hardware mods.

Another big shock was seeing my first set of Flash ROMs. These are nothing like the ROMs of old, being so small that they need a daughter board to get the pin-outs of the chip to fit the old holes. The chips themselves stick out at the left-hand end of the boards, (you get two of them).

However, by the time you read this, it is quite possible that the next batch of chips will be the normal large beasts which look like the RISC OS 3.x chips we already have. The first release of the chip-set as Flash ROMs comes with a StrongARM Compatability sheet. This small print A5 single page holds dark secrets which may cause a good deal of hair pulling and may even result in a phone call to the extremely helpful OS4 help line. In essence it warns that the Flash ROMs can cause 'instability in the system'. Nah I thought and popped them in, and it didn't work. My machine hung-up even before booting, showing a solid green screen. I didn't think that my system was overly loaded with hardware add-ons as the warning sheet hinted, but it turned out that my old CD drive did something odd to the power lines which the new chips didn't like. Other culprits could have been 'high speed' PC cards, large chip count memory boards and some combinations of podules and backplanes.

Removing one of my two 32Mb SIMMs also cured the problem and allowed a full boot with the CD-ROM installed, but I'd rather have 64Mb so I took off the CD for the moment and put the second SIMM back. My SIMMs are not matched, which, had they been, would probably have avoided the problem.

If you have decided to use the new filing system facilities then you'll probably want a new, larger harddisc. Before charging off to get a new drive please note that there is a hidden problem with RISC OS 4's massive ability to handle files, and that is your problem of finding them.

PC users have had to cope with this for a long time and I don't think they have a good solution yet. RISC OS users have had fewer files until now and have also had a decent Filer to find them with, but now I fear finding one file in a directory containing hundreds will irritate a lot of people. Anyway, this is a solvable problem with care and planning, and so I would firmly suggest getting a new drive. You can put the old one in your old Acorn and give it to the kids – once you have transferred the data that is.

After fitting the chips you are told to do a Delete-reset. This will also reset the clock, oddly to 1995 as did OS3.7. Don't forget to reset the clock to 1999 or all your new directories and files will be five years old. In-depth reviews of the new facilities of RISC OS 4 will soon be published, but with luck you should have your own set of chips in and working by then. I urge you to do so, order now to shorten the wait for a noticeably faster, even more responsive, feature packed and, most importantly, stable and intuitively usable computing tool.

END

CDFS::RISCOS4.$

CONTENTS	WR/	1834	Text	14:56:11 19 Jul 1999
Y2K	/		Directory	14:12:52 18 Jul 1999
XTRAAPPS	/		Directory	14:12:47 18 Jul 1999
RECOVERY	/		Directory	14:12:44 18 Jul 1999
PLUGINS	/		Directory	14:12:40 18 Jul 1999
IMAGES	/		Directory	14:04:37 18 Jul 1999
FREESOFT	/		Directory	13:54:00 18 Jul 1999
DISCIMAGE	/		Directory	13:53:28 18 Jul 1999
3RDPARTY	/		Directory	13:53:26 18 Jul 1999
!RO4INSTAL	/		Application	15:57:11 09 Jul 1999



Figure I: What you get after installing RISC OS 4

Contacting me

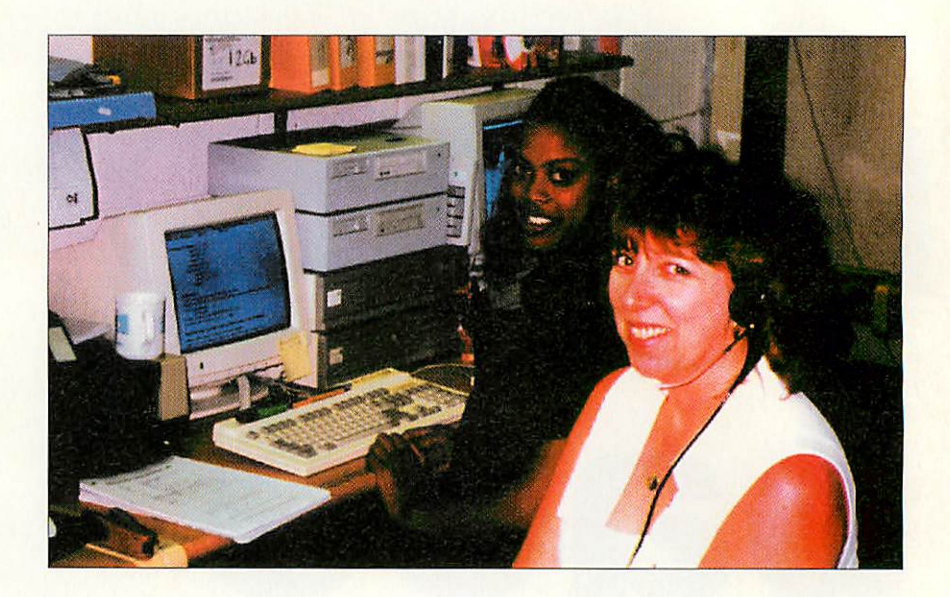
Simon Anthony
sranthony@innotts.co.uk

Reflex action

Alasdair Bailey acts on reflex

Reflex Electronics Ltd have had close links with the Acorn market since their foundation in 1995. The Stevenage-based company was originally set up as a manufacturer of printed circuit boards for the electronics industry. David Hughes, former production engineering manager at Acorn, founded the company along with Iain Dacre, an expert on the workings of the financial world who had spent a number of years working overseas.

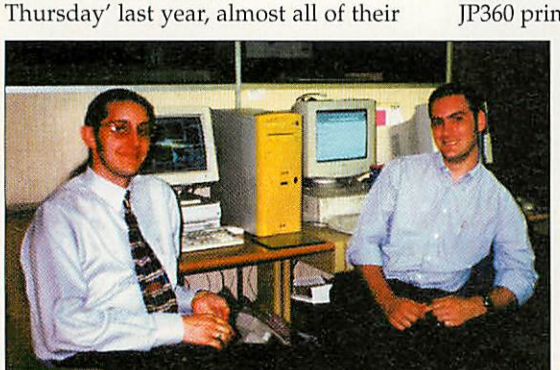
After about a month, the two founders were joined by David Lumley, another ex-Acorn employee who had been responsible for quality control and also repairs, both in and out of warranty. David brought with him considerable expertise at a time when Acorn were looking for someone to really take control of the servicing/maintenance side of the operation.



The servicing side of Reflex started out in a small area of the manufacturing unit, but within three months the decision was made to take over the neighbouring building and form a dedicated service company. Service and repair quickly became a large part of the Reflex Electronics Group's business. Numerous Acorn staff moved over as Reflex's relationship with Acorn bore fruit and more and more warranties and on-site service contracts were administered by Reflex.

Who?

Reflex Electronics Servicing are perhaps the best kept secret of the Acorn world. Prior to 'Black Thursday' last year, almost all of their servicing/repair work was carried out under contract with Acorn. This meant that when Reflex answered a call with regard to honouring an Acorn product warranty, they would answer as if they were Acorn, so the customer would often have a fault fixed without even realising they were speaking to Reflex rather than Acorn themselves. This sort of system is common in industry and still goes on with the 'Computers for Schools' support line which is manned by Reflex.



In the early days, Reflex mainly serviced the Acorn-badged Olivetti JP360 printers and A4000 power supplies. However, Acorn's "wise" decision to use the Liteon AKF18 monitors with the A5000 series meant that Reflex were inundated with repairs.

A modification was eventually sanctioned by Acorn which was then applied by Reflex to all faulty monitors that came through the door. Some of you will no doubt remember these notorious models which were plagued by dry joints that heated up and often caused smoke to rise from the back of the monitor.

Today, more than 30 people are employed at the Stevenage site, which is currently being modified to include a reception area along with improved communications between the two adjoining units. During busy times, the company receives up to 30 calls an hour which are all dealt with by four dedicated personnel.

Some may wonder why Reflex are located in Stevenage when they had such strong links with Acorn. The reason is simple: both founders lived in Stevenage so it was really the only sensible option.

At one point relocating the firm in Cambridge was considered but when the factory unit next door became available there was no longer any need to move. Besides, some ex-Acorn people found a 15 mile journey into Cambridge took far longer than the 40 or so down to Stevenage. Acorn's decision to abandon the desktop market will not

really be felt at Reflex for a couple of years yet. The warranties and on-site support contracts which Reflex deal in are mainly done on a two, three or five year basis which gives the company plenty of time to find a new direction if need be. However, Reflex do remain committed to the Acorn market. They have taken on all the spares formerly stored at Acorn and are now offering to repair Acorn kit directly, rather than through sub-contracts with Acorn.

David Lumley, Operations Director at Reflex was keen to stress that they would be continuing to support the market place, "We're all still Acorn people" he remarks during the interview.

Reflex are indeed true Acorn people, the company is still run using RISC OS software for all manner of applications, including day to day word-processing needs along with the comprehensive customer database and goods in/out system.

However, two PCs are in use but only in the accounts department and spares stock keeping where, unfortunately, the required software just isn't available for RISC OS.

Reliability

The old adage that Acorn kit is more reliable than the PC alternative is backed up by the experiences of those at Reflex. A brand of PC, which Reflex recently carried out warranty repairs to, showed a failure rate of about 10%. Compare this to a failure rate of only about 2% with the A5000 series once the monitor problem was remedied and you can see why some schools just keep on using their old Acorn kit.

David Lumley has a theory which goes towards explaining this observation: "The thing about an Acorn machine is that when they're put together they go through what's called 'DRAT testing' – (Design Reliability Assurance Testing) where all the components have to go through vendor approval, and units were tested in an environmental chamber where they would be subjected to drastic changes in temperature and humidity.

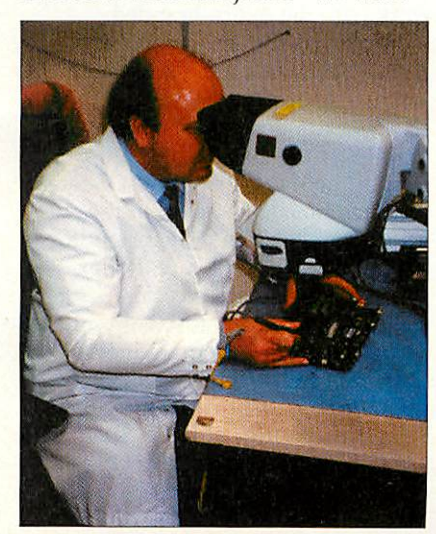
"With a PC, a bloke will buy that power supply for it one week but he'll change his supplier next week...they never have the design reliability testing, so it's obvious Acorn machines have to be more reliable."

David Hughes, managing director, continues: "As a manufacturing site, we were never allowed to change any of the components without permission from Acorn – in fact the test software was designed so it would throw it out".

He goes on to describe how Conner once changed the firmware on one of their harddisc drives without changing the revision number on the outside. This resulted in the test software saying an unknown drive had been fitted and rejecting them.

Another reason cited for the reliability of Acorns is that the operating system is completely housed in ROM. On a PC, meddling children or poorly written software can easily mess things up in the Windows registry and the like. This means that many of the problems with PCs are purely software issues.

It must be a pain for a repair company to be working with such a reliable product, during the interview someone joked "We wish



Caring for your computer

When sending in an item for repair ensure that is it packed securely – not in bin bags.

No display on monitor? It sounds silly but before raising the alarm, make sure you've done the following:

- Check that no leads have become disconnected;
- Check settings on the monitor, changing contrast to one extreme can reduce display to a blank screen;
- Restart the computer with the shift-key held down;
- Restart the computer with the delete-key held down;
- Try a different monitor on computer if available;
- Try the troublesome monitor on another computer;

Computer asking you to insert a disk that was used during the last session? Before saving a Desktop boot, make sure the computer hasn't seen any media that you don't want it to remember on subsequent boot-ups. A safe procedure to prevent this is to restart your computer before saving the desktop boot.

Computer crashing on boot-up?
Check the following:

- Turn on with the shift key held down, OK this time?

Y: Something loading from *!Boot* sequence is causing a problem, remove files/commands until the problem goes away. Perhaps run *!ResetBoot* after backing up your existing *!Boot* structure.
N: Hardware problem, turn on with the delete-key held down – OK this time?
Y^1: Re-boot computer for a second time – OK this time?
Y^2: Your computer is now fixed.
N^2: something in the boot sequence (not necessarily within *!Boot* itself) is changing the CMOS and the computer doesn't like it!
N^1: Hardware problem. Send to Reflex for repair.

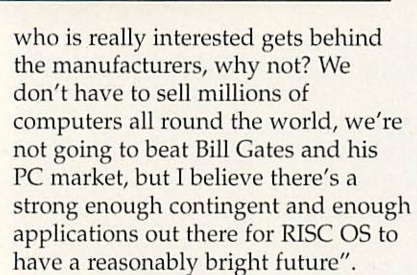
If experiencing problems with RAM recently added to your machine, verify with the supplier that the specification of the RAM is correct for the computer (as detailed in the Welcome Guide).
Computer locks up when deleting/copying files on an IDE harddisc formatted larger than 2Gb?

- Configure ADFSBuffers to 0K. If this doesn't fix the problem, format the harddisc again with version 2.50 of *!HForm*.

they weren't so reliable!"

So, we know that Acorns are very reliable when compared to your average PC. However, experienced users also know that there have been plenty of common faults in the hardware over the years. The problem described earlier with the AKF18 monitors must weigh-in at number one, with various power supply unit problems following a close second.

The early Risc PCs featured a mere 70 watt power supply in the base model, this was not quite sufficient once users started to add extra drives and expansion cards. Furthermore, a faulty diode meant that Reflex saw these machines come flooding in for repair until Acorn standardised on the higher power unit.



Acorn also benefited from the partnership with Reflex. On a monthly basis, a report on the top ten causes of failures was sent back to Acorn in order for them to consult their suppliers and manufacturers and see that problems were rectified. One example of this process working well was the problem which early Risc PCs suffered whereby a part in the hinge on the door flap was too weak and often snapped. This was promptly rectified by Acorn who changed their moulding in order to beef up the offending component.

Not just Acorn

Almost since the start, Reflex have been looking after more than just Acorn kit. Most of the other support contracts have in fact stemmed from their dealings with Acorn. For example, Reflex coordinates all technical support for Tesco's Computers for Schools venture. Their work with the Acorn-branded monitors has resulted in warranty repairs on Iiyama monitors whose UK arm is also based in Stevenage.



This extra business should ensure that Reflex are able to continue supporting the Acorn/RISC OS range for some time to come. With the future now looking quite bright for RISC OS based hardware, Reflex were in negotiations to offer technical support to RiscStation Ltd as well as having their engineers trained in fitting the RISC OS 4 upgrade.

Those in charge at Reflex seem to share the opinion that RISC OS as a platform will be with us for some time to come: "So long as everyone who is really interested gets behind the manufacturers, why not? We don't have to sell millions of computers all round the world, we're not going to beat Bill Gates and his PC market, but I believe there's a strong enough contingent and enough applications out there for RISC OS to have a reasonably bright future".

During my visit, Iain Dacre, Commercial Director, was arranging for a new telephone system to be installed. It's worth pointing out that the company were doing their utmost to avoid using a touch-tone-based call handling system. Iain commented that he felt they were very impersonal yet nobody seems to sell the traditional systems anymore.

This policy is sure to win custom, there's nothing worse than calling to see how a repair is going and coming up against a brick wall of "Press 1 if your computer won't turn on... Press 2 if your monitor is on fire...".

Strange fixes

During their short history, Reflex have come across many strange objects inside machines. Two notable examples are a packet of mints which had perhaps been left in the case on the production line and also some primary school playing cards which a child had posted into a floppy disc drive! Some customers' apparent lack of care for their computers also strikes the staff at Reflex from time to time. Occasionally, machines will be sent in packaged only in a bin bag, hardly sufficient protection for a piece of kit that's worth over a grand. Certain users attempts to upgrade their computers also provoke concern amongst staff; an 8Mb RAM upgrade for an A5000 was once seen held in place by huge amounts of hot-melt glue.

Reflex are often willing to give out free advice even if it doesn't result in your computer coming in for a repair. Take their Website for example, it contains plenty of information on diagnosing and fixing problems which is unavailable elsewhere. The company were also willing to let us include hints for good computer care in this article, some of which can be seen in the panel.

Hopefully, the Reflex Electronics Group will continue to grow and fly the flag for RISC OS kit in industry for many years yet. Following Acorn's withdrawal from the market, Reflex are now more than willing to handle individual repairs out of warranty, as well as administering and auctioning existing warranty commitments under the Acorn name. It is worth pointing out though that your local dealer may also still carry out a range of repairs. Many thanks to all the people at Reflex for their cooperation and assistance in writing this article. END

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Fax:	01438 725158
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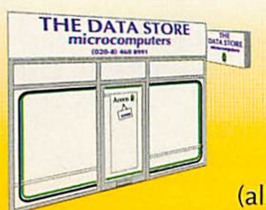
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3D splendour

Part I of Max Palmer's TopModel2 review

TopModel, the 3D modelling application from Sincronia, has been around for a number of years. While the development of many applications of a similar vintage has long since ceased *TopModel* has continued to evolve and promises to do so for a good while yet. Given this state of change and the length of time since it was last reviewed, now seems an appropriate moment to revisit this elegant, graphical workhorse.

While one of the application's strengths is its innovative approach to modelling, it is also, paradoxically, one of its weaknesses. The user interface in the original version of *TopModel* was cluttered, hard to get to grips with and restricted the user to 16 and 256 colours. *TopModel2* brought a vastly improved look and feel. However the interface still breaks many of the rules laid down by the RISC OS Style Guide.

As a result of this maverick approach many users, while wooed by *TopModel2*'s power and elegance, have struggled to get the most from the software and expressed a desire for a series of tutorials to help them get started. Indeed, it was one such posting on the *TopModel* mailing list a few months ago which, by way of the weird and wonderful fashion in which electronic-based discussions seem to wander, prompted the idea for a series of tutorials in *Acorn User*, the result of which are set to grace these pages over the next few months.

But before we begin the series, I would like to take those RISC OS users, both new and old, on a guided tour of *TopModel* in the hope that I might whet the appetite and fuel the thirst for the third dimension. The latest, publicly available version of *TopModel2* stands at 2.14c, the one reviewed here.

Improvements over previous releases include new transparency options, extra keyboard shortcuts, flat shaded movement mode, the ability to save resources and scaling options on multiple copies, among many others.

Existing users may upgrade older versions of *TopModel2* for around £30, alternatively they can acquire a 'free' upgrade to 2.14 when they buy the latest plug-in – *TopFonts* – which ships on CD-ROM. The latter costs a shade under £60 and is pretty much an essential purchase if you need the capability to produce 3D text, albeit with some restrictions (which I shall discuss later).

As yet, the only other plug-in that is available for purchase is *TopDeform*, which provides a number of different methods of distorting meshes. However, as some of you who went to the Wakefield Show might already know, *TopBones* and *TopAnimation* are coming along nicely and should hopefully be with us in the near future.

Out of the box

Installation of *TopModel* is now, thankfully, much easier than it once was. Gone are the days of the horrendous Gordian protection system, which caused many users havoc, especially when upgrading. In its place stands a much more logical installation program. Just double-click on the program to start, type in your name, drag the directory icon to the location you wish to install *TopModel* in and then click *install*.

In addition, *TopModel* comes with a utilities disc, this provides a number of very useful stand-alone programs to convert *TopModel* files to and from other graphics formats, plus with a few example files. Finally, the resources disc provides extra example

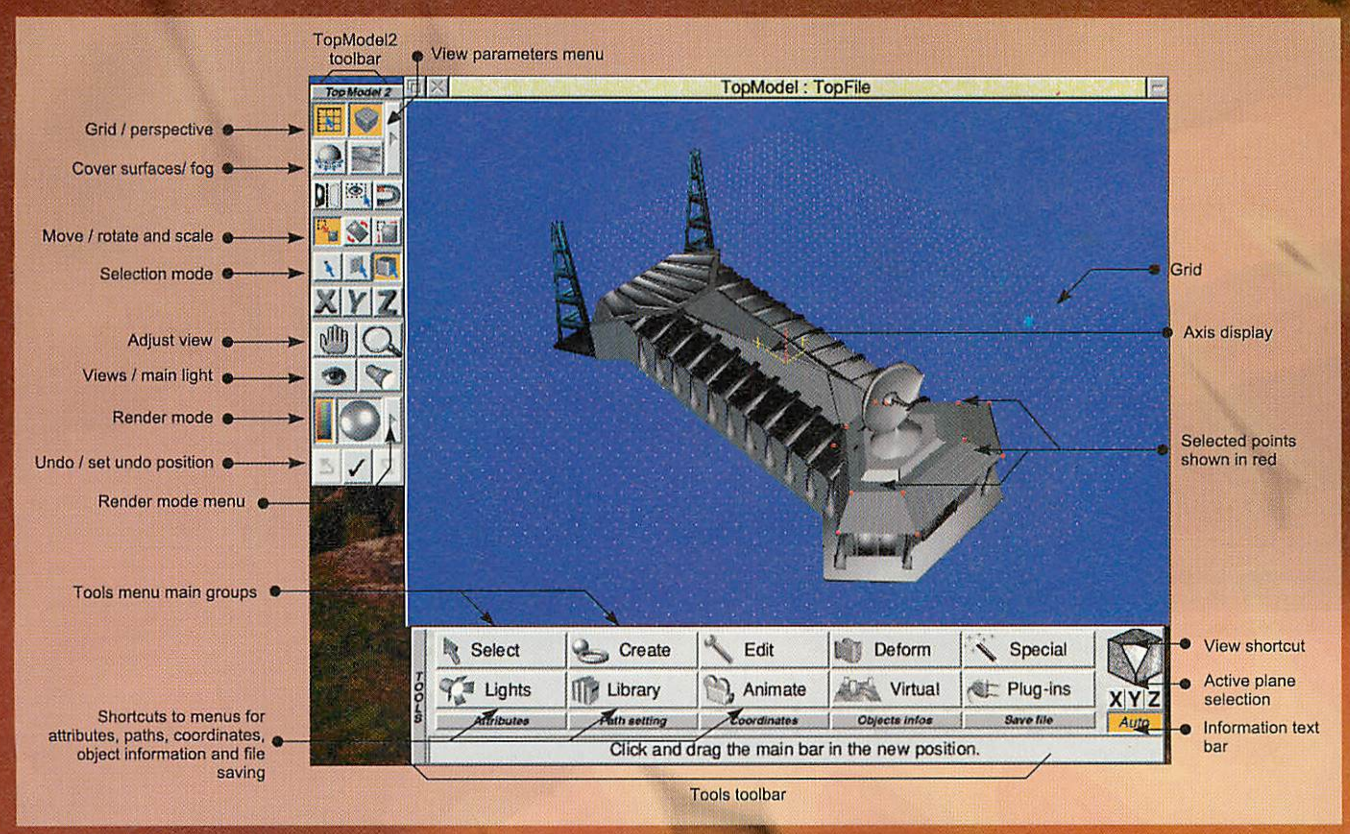


Figure I: TopModel2's user interface

files and three tutorial scenes.

In addition to the above, *TopModel* ships with a manual. While the manual is fairly comprehensive at 120 pages, including sections on each of the tool groups and a step-by-step tutorial, it suffers from being written by a non-native English speaker which makes it hard to follow in places.

This is unfortunate since the operation of some of the more complex tools is difficult to explain and I would urge Spacetech or Sincronia to consider revising a number of sections to improve the flow and clarity. The manual *has* been updated since the first release. If you're still struggling with the first edition contact Spacetech to get an update.

On launching *TopModel*, you are presented with the memory setup window which prompts you to configure the amount of memory that is reserved for storing points and polygons. Once done, the main *TopModel* application springs to life, installing itself on the right hand side of the iconbar and presenting a single pane with two toolbars, one below the pane and another to the left, reminiscent of *Artworks* (Figure I). It is worth noting that the main pane has no window furniture for resizing or scrolling the work area, however, the size of the main window may be changed by dragging the bottom and right-hand edges of the window.

While this approach is a bit unusual for a RISC OS application, once you get used to it, it works well. If the default style and layout doesn't meet with your approval, you may adjust a number of properties of the application, for example the background colour, using the preferences window – accessed from the iconbar icon menu. These preferences may be saved as the defaults for future sessions. Unlike many other three dimensional modelling applications, *TopModel* provides only a single view of the scene being edited.

In most packages three or four simultaneous views are displayed, namely two orthogonal elevations, a plan view and an isometric view. While the *TopModel* approach may seem a bit daunting at first, it works well and provides a more natural modelling environment, you can

Breakdown of tools toolbar groups.

Select:	Provides a number of modes by which selections can be made, including selection by colour, point or primitive. Also contains tools for creating and arranging groups.
Create:	Tools for creating basic objects and primitives.
Edit:	Supplies tools for manipulating objects once created. Tools for copying, mirroring and joining points can be found within this group.
Deform:	Contains tools for distorting a selection. Namely, linear distortion, bezier distortion, torsion and bevelling.
Specials :	Encapsulates a series of lesser-used tools for manipulating objects, for example inverting/repairing polygon normals, sub-dividing polygons and joining points to create new polygons. Also contains the sweep and extrude tools.
Lights:	Governs the creation of extra lights (radial, point and spot).
Library:	Provides access to pre-defined object libraries. Thumbnails of objects can be dragged directly into the view to add them to the scene.
Animation:	Basic animation controls.
Virtual:	Simple console for navigating through a scene.
Plug-ins:	Leads to a sub menu listing all available plug-ins.

adjust the view to suit the creation/placement of an object or quickly check the scene from any angle.

Having said this, in practice the vast majority of modelling will be carried out using a plan or elevation of the scene. With this in mind Sincronia have provided an icon at the right hand side of the lower (main) toolbar, a picture of a cube with one corner missing, that may be clicked on to automatically switch the view to one of eight different directions, depending on the face of the cube selected and mouse button used.

For example, select-clicking on the top face of the cube would provide a view of the scene from the top, looking down, while adjust-clicking would provide a view of the scene from the bottom, looking up. Just below the cube are three buttons, labelled X,Y and Z that may be used to select the active plane. Alternatively, a fourth button – cunningly labelled 'auto' – delegates the decision to *TopModel*.

"Hang on a minute. What's all this talk of an active plane?", I hear you cry. The term 'active plane' describes the plane in which we are working and is used to overcome the problem of manipulating objects in a three dimensional world when we only have a two dimensional, monitor screen, representation of that world.

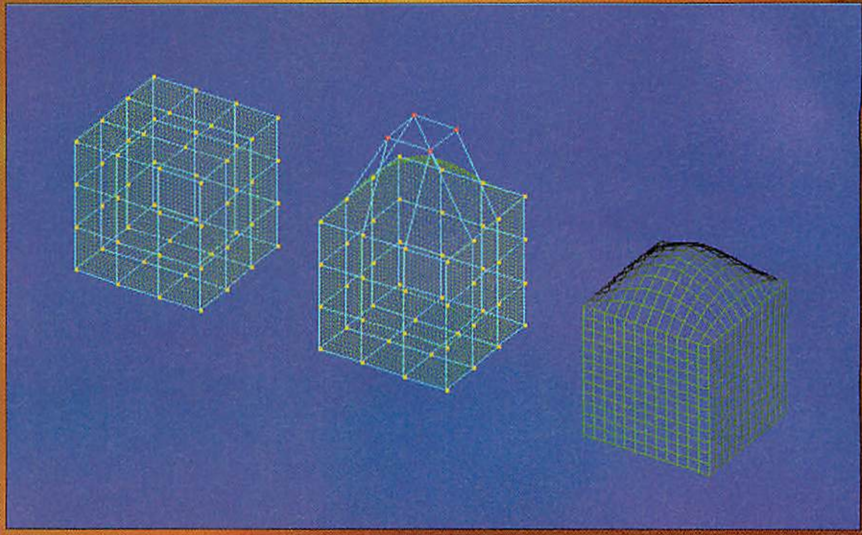


Figure III: Bezier cube (from left to right) : Before distortion, during distortion (using bezier control points to control surface shape) and after conversion to polygons

For example, imagine we had somehow managed to create a model of a table with a cup on top and were viewing it in 3D in *TopModel*. For some reason or another, we decide that we're not happy with the position of the cup and would like to move it from one corner of the table to another. One method of doing this would be to switch to a plan (top) view of the table and then adjust the position of the cup. However, if the currently active plane were selected to be the horizontal plane, that is to say the same plane as the plane in which the surface of the table top lies, we could simply select the cup and drag it around within our current view, safe in the knowledge that our cup was only moving about on the surface of the table, rather than up, down or any other direction.

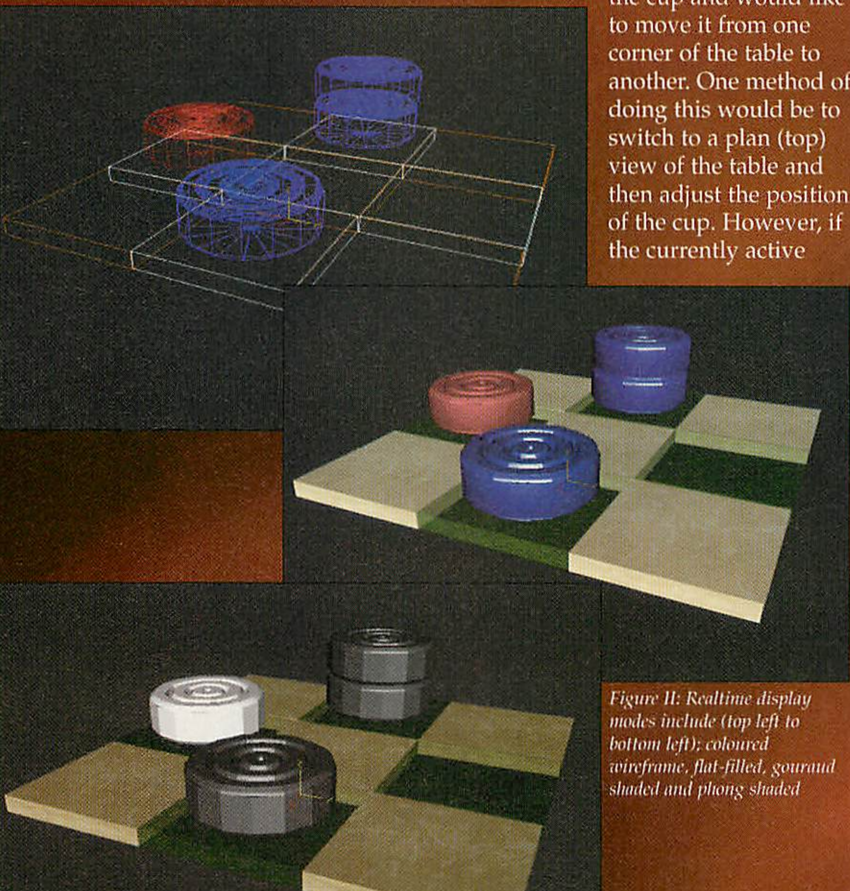


Figure II: Realtime display modes include (top left to bottom left): coloured wireframe, flat-filled, gouraud shaded and phong shaded

In this example the active plane has constrained any adjustments that we make to the horizontal plane (within the scene), in spite of the fact that we might have been dragging the cup in a vertical direction in the display. While this may seem pretty confusing, you'll never really notice the active plane in action since in practice virtually all the adjustments you make to objects within your scene will seem perfectly natural, which is the whole idea.

To the left of the active plane and view selection controls are a group of buttons that each lead to a new pane representing a group of related tools. When selected, the pane replaces the main pane options, presenting the user with another group of options or tools. To go back up a level you simply select the cross (close window icon) in the left-hand corner of the pane, a bit like navigating a directory structure using Adjust clicks.

Below these buttons are another set of thin buttons which represent short cuts to five pop-up menus. Finally, at the base of the tools-toolbar is a context sensitive help display which helps explain the action of any tool the pointer might be hovering over.

While the tools-toolbar mainly deals with options for creating and manipulating objects, the *TopModel2* toolbar, to the left of the main pane, presents options for interacting with the scene and adjusting the properties

of the display. For example, there are short cuts for entering the selection mode, as well as tools for adjusting the current render style, display options and for manipulating your viewpoint.

As you may have gathered, there is an vast array of tools available in *TopModel* - too many to cover in detail. For this reason I have decided to present a brief overview of the principal tool groups in the accompanying text box, and will concentrate on a few of the more commonly used and useful features in the main text. The tutorial series that starts in the Christmas issue will provide a more in-depth look at some of the functions not covered here. The idea for now is to outline the kind of things that are possible in *TopModel*, and some that are not.

Although *TopModel* is perfectly happy running in a 16 colour mode, I would strongly recommend using a minimum of 256 colours, or – if VRAM permits – a 32 thousand colour mode. In addition, *TopModel* supports a number of different render styles, each of which gives slightly better on-screen results, at the expense of redraw speed (Figure II).

Unlike some modelling applications, all of the rendering modes allow real-time, interactive modelling. That is to say, you may create and edit objects in any of the rendering modes, including the perspective mode.

However, from a practical point of view it is much easier to select points and edit objects using a wire frame display, even on a StrongARM equipped machine. Once you have finished an edit you may then switch mode to preview your results. A relatively recent and useful addition to the options that greatly aids this process is the flat-shaded movement mode.

This setting allows you to edit your scene in wireframe mode and then preview a 'solid' version of the scene whenever you rotate, zoom or translate your viewpoint. This is particularly handy if you use the keyboard and mouse shortcuts – Control+Select for zoom, Control+Adjust for rotate.


Figure IV: Example objects created using the sweep tool

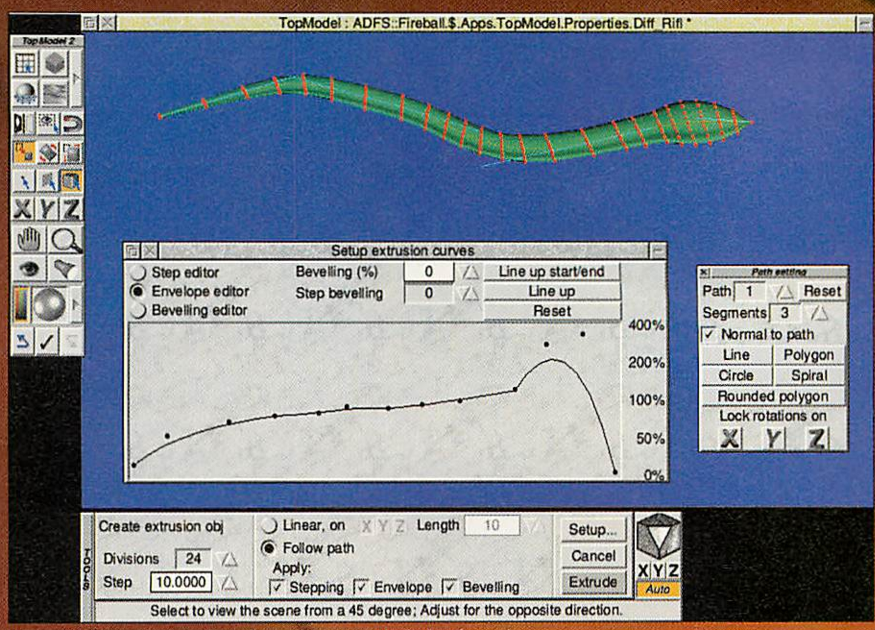


Figure V: The extrude tool can be used to create the body of a snake by extruding a profile along a path, using a user-defined envelope

Object manipulation

While talk of rendering modes is all very well, it doesn't matter a jot if you can't create anything to place in your view. Fortunately, *TopModel* offers ample options for this purpose. At the lowest level there are tools for creating the basic primitives, namely: cubes, spheres, cylinders (encompassing pyramids), tori (doughnut-shaped objects), pipes, paths, surfaces and polygons. Furthermore many of these tools support creation of both polygonal and bezier forms.

The latter are essentially objects which describe a surface and have control points which may be moved to distort their shape. Once you are happy with the result the bezier representation of the object may be converted into a polygonal model, with a selectable level of detail, as shown in Figure III. While these objects sound a bit esoteric (and they are) they allow distorted, smoothly curved variants of common shapes to be created, which might otherwise be difficult to produce.

My only niggle, other than trying to grasp the sheer range of possible applications, is that the bezier shapes are often composed of a number of pieces which pull apart when using the primitives selection tool. While this behaviour is fair enough, it feels slightly inconsistent, since I would expect the primitive tool to select the whole of the bezier shape, rather than part of the object. On occasion I have also had difficulty converting a mesh to polygons and keeping it as polygons. However, this problem has usually been solved by repeating the conversion.

It would be great to have enough time and patience to model everything we need to make our perfect scene, in reality though, time is precious and some tasks too complex or tedious to contemplate doing ourselves. Furthermore, the growth in the Internet has led to the creation of a number of Web and ftp sites which contain an impressive array of pre-made, ready-to-download, 3D meshes.

Fortunately, to ease our dilemma, the creators of *TopModel* have produced a couple of utilities for converting a few of the more popular 3D geometry formats into *TopModel* files, including the ubiquitous DXF format. In addition, the library option on the Tools toolbar provides access to a series of predefined object categories, from which individual objects may be selected and dragged directly into a scene.

Finally, it is possible to import sprites as heightfields and extrude (give depth to) shapes created in *Draw*. Unfortunately though, the triangulation algorithm used to 'fill in' shapes with polygons can often produce mixed results, particularly with complex shapes, yielding objects which may require some manual editing within *TopModel*.

This is particularly true of objects which contain holes. While the import of drawfiles is a very useful feature, it could be improved a lot. Hopefully Sincronia will oblige and

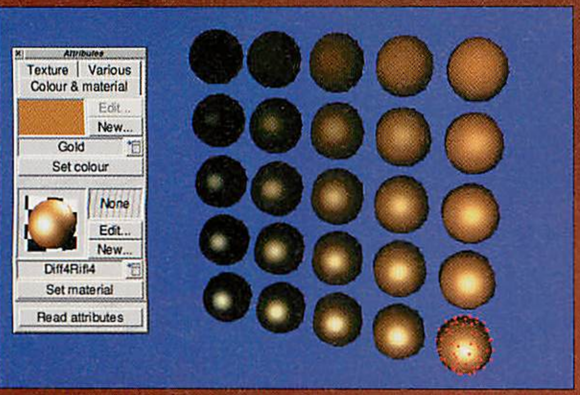


Figure VI: The illustration shows the effect that different bevel styles have on the appearance of some of the fonts supplied with the plug-in TopFont

turn what is a useful, if somewhat unpredictable feature, into a truly powerful tool.

Aside from the creation of simple shapes or the import of models, *TopModel* provides a number of high-level tools which permit the creation of more complex shapes and structures, using primitives as a basis. Of these, those that are likely to be used most often are the sweep, bevelling and extrude tools.

One typical application of the sweep tool would be to create a rotationally symmetrical object, say a vase. To do this, you would create an outline (cross section) of the vase using the line tool, then position the profile at the appropriate distance from the origin and invoke the sweep tool, using a 360 degree sweep, covering – for the sake of example – 18 divisions.

By adjusting the number of divisions, steps and envelope even more complex shapes may be created, a number of examples of which are shown in Figure IV. Furthermore, the sweep can be performed using a bezier curve, yielding an editable bezier surface, which can be further adjusted to create even more complicated objects – powerful stuff, yet extremely easy and quick.

The extrude tool permits you to take an object or, more commonly, a cross-section, and smear it in one direction to produce an elongated version of the object. For more dazzling results, you can also opt to use a predefined path from the paths menu and set up an envelope, the latter will be used to apply a scale factor to the cross section during the extrusion, while the path defines the trajectory along which the profile will be drawn out.

Circumstances in which the extrude tool might be used include creating a hosepipe or the body of a snake (Figure V), or perhaps, in the case of a simple linear extrusion, a plinth or curbstone. There are a number of tools in *TopModel* that, while not strictly object creation tools, are very useful for creating interesting shapes. These tools are collectively known as deformation tools and are split between the standard tools that come with *TopModel* and the deformation tools that are supplied with the plug-in *TopDeform*.

Their actions range from simple linear distortion of an object, to complex torsion distortion which is unwieldy to use. The most useful of the standard tools are bezier distortion and the new bevelling tool.

When invoked, the bezier distortion tool divides the bounding volume of the selected points into 64 rectangular zones (each axis is subdivided into four). Each corner of a zone has a bezier control point which may be selected and moved to distort the shape of the overall volume.

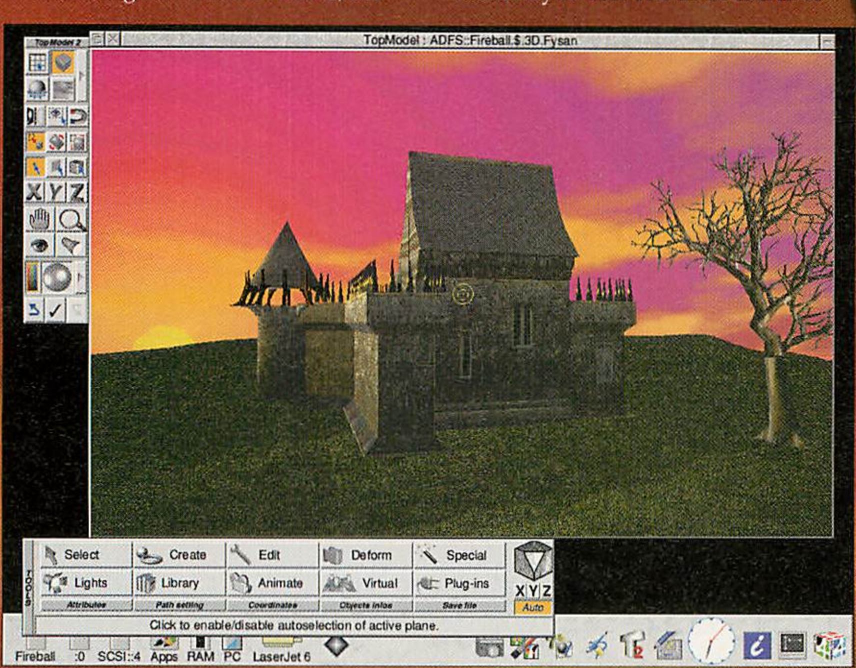
The resulting *spatial* deformation is then applied to the selected points contained within the volume. Once you are happy with the results you can elect to permanently apply the distortion, or alternatively you can cancel the operation. This tool is ideal for bending and twisting a shape to produce a more organic or curvaceous look.

Bevelling is the most recent addition to *TopModel*'s stable of distortion tools. Although some of the other utilities provide support for bevelling, this new distortion tool makes the process of creating objects with complex edges much simpler. A selection of pre-defined profiles are available for use, including rounded, gothic, base relief and cut-off edge styles (see Figure VI for examples of bevel styles applied to fonts).

You can even modify existing styles or create your own, although I feel the user interface to the edit window could be improved to make this process easier.

Having said that, despite its quirks, this tool is a great addition to *TopModel*'s already impressive feature set and is yet another example of Sincronia's commitment to continually enhancing *TopModel*'s power.

Well I'm afraid I've run out of room for now – I did say there was a lot to cover. Next month I'll continue the review by seeing how *TopModel* copes at adding a touch of realism to objects, and how Sincronia have planned for the future by taking the plug-in route. Do join me then. **END**



Product details

Product:	TopModel2
Price:	£152.75
Product:	Top3DFonts (Plug-in)
Price:	£58.63 (includes *CD* collection2 and free v2.14 upgrade)
Product:	TopDeform (Plug-in)
Price:	£28.79
Supplier:	Spacetech, 1 The Courtyard, Southwell Business Park, Portland, Dorset DT5 2JS
Tel:	(+44/0) 1305 822753
Fax:	(+44/0) 1305 860483
E-mail:	sales@spacetech.co.uk
Web:	www.spacetech.co.uk/topmodel/

Quaking boots

Alasdair Bailey reveals that game

The time has come at last, *Quake* is finally with us! My predecessor first announced plans for the conversion way back in the spring of 1997 and now the product is finally on sale. Well, that's all true except for the fact that this is not actually the completely native engine re-write we've been waiting for from Martin Piper, but rather a smartened-up version of Peter Teichmann's freeware RISC OS player app.

As far as we can tell, the freeware player will remain available while the slightly enhanced version is sold along with CDs containing the game's huge level files. This means that it is still possible to get a fully working copy of *Quake* on your Acorn by purchasing a copy of the PC version on the High Street then downloading the freeware player app from the Internet.

R-Comp are still committed to improving their version but seem eager to get some form of product onto the market as soon as possible. This is not necessarily a bad thing, it will gain them some revenue for the PC version CDs which have been waiting in storage for almost one and a half years now. In this issue, we have exclusive interviews with Martin Piper and Andrew Rawnsley so that you can get both angles on this RISC OS debacle which is finally coming to a peaceful end. There's also a full review of the R-Comp product.



Quake: at last, proper 3D movement comes of age as does proper multi-player support


Martin Piper – so he does get out of work occasionally

Martin Piper

AU: Tell us a little about the problems which slowed your conversion of the *Quake* engine.

MP: Where do I start? Like a lot of other RISC OS coders I also have a proper job, at Argonaut Software in London, which pays the bills. For what seems like a long time now the project I'm working on (*Alien Resurrection* for the PSX) has been taking nearly all of my time. Last year I also ended up in hospital after collapsing at work due to working too much and stress.

I decided back then to re-evaluate my priorities and not work 14+ hours a day on maintaining my day job and RISC OS stuff. After all I don't want to kill myself.

AU: How close to completion is your conversion of Quake?

MP: I would need a week all to myself to finish off the code but since I can't take a holiday at the moment that isn't going to happen.

AU: What sort of performance do you estimate your conversion would have achieved once fully optimised on a 233MHz StrongARM processor?

MP: Well I can't give exact figures

because I don't have a 233 SA but those who have seen the speed an early version was getting would tell you it's noticeably faster than *ArcQuake*. I couldn't comment on that because I haven't seen the latest version of *ArcQuake* myself but it's entirely possible. Probably because I've had the time to completely redesign and implement a new rendering pipeline which is much faster on the ARM chip architecture than Carmack's original code.

AU: Did you have any extra features planned for your *Quake* engine over and above those in the PC version?

MP: Yes. Because of the way the renderer was designed *Quake* would use a separate device driver module for the screen device. In simple terms this means that I can add a high colour rendering mode or support PCI 3D acceleration just by adding a new device driver module. The beauty of this is that if a machine came out that did actually use extra processors or had fast floating point the device driver would just need to be changed, not the entire game.

AU: Will TBA Software be releasing any more products for RISC OS?

MP: Yes we want to do some more games. Probably using a version of our new 3D engine technology that was developed for *Quake*.

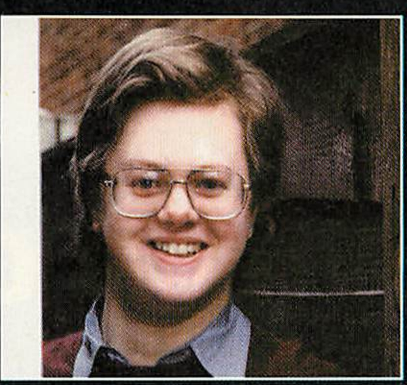
AU: Many thanks for your time, we wish you every success with your work at Argonaut.

MP: Thank you for the interview. Hopefully *Aliens* will be finished soon and I can get back to my normal life.

Andrew Rawnsley

AU: Why did RCI end up publishing the RISC OS version of *Quake* when TBA had been working on the engine for quite some time?

AR: TBA had been working to produce a *Quake* 'player' from scratch with the TBA TAG engine. While this was a good stop-gap solution, it was only suitable for 'techie' users, who would be happy to buy the game from one place, and the driver from the other.



Andrew Rawnsley, the self-made king of RISC OS gaming

Following *Doom*, we had a good relationship with the PC publishers, GT, who practically force-fed us the *Quake* packs. They were worried that with just the driver available, piracy would be rife, as people would buy the RISC OS driver (out of loyalty) but rip off the level data.

One of the big points about dealing with us (as far as GT were concerned) was that we would buy the PC kits off them, and only sell the full product. This minimizes piracy, and provides an effective route to market. TBA were to get a very healthy royalty per copy sold.

AU: At what point and for what reasons did you adopt a version of the freeware engine rather than the TBA engine?

AR: We finally made the decision in May/June this year. Readers should remember that we purchased the *Quake* packs right at the start, on the assurance that the TBA *Quake* driver would be ready for the Wakefield show – 1998. That was over a year ago. Given that the units are how GT make their money on the deal, they aren't cheap, and we've had endless copies holed up in a warehouse for 12 months, all paid for!

Since then, many of you will know that I have become significantly involved in RISCOS Ltd. Given that we (R-Comp) were already well out of pocket on *Quake*, my necessary investments in RISCOS Ltd made life rather uncomfortable.

For the previous year, we had had repeated promises of demo versions, and full releases always "in 2 weeks". These never happened, and while I am very sympathetic to Martin's health problems (for goodness sake, I've had enough of them myself) I would have preferred a "it'll be 6 months" or whatever. This made things very frustrating, and I gradually began to lose hope of ever releasing the product.

I contacted Peter Teichmann who developed the freeware version. I make no comment on the legitimacy of the freeware release – the *Quake* sources are still officially unreleased, and access to the source still costs a lot of dollars. However, this release of *Quake* allowed people to play the game when they otherwise couldn't, and was released well before anyone else got involved, and as such it was important for the market.

Anyway, Peter was very helpful, and prompt with delivery of demo versions. We sent him all the resources needed to produce a player that would run the extra expansion packs supplied with our pack, and Peter rapidly returned a working version. Since then, there have been various bugs fixed.

AU: Why should users buy your pack for £20-25 rather than obtaining the PC version at a high street store for £15 and using the freeware engine?

AR: The version we supply will be enhanced above the freeware



Quake – bigger than an eclipse on a cloudy day



Quake II: not yet out for RISC OS, sadly, there are no plans for a release yet



"What did you call me?"

version: Support for Malice and Q-Zone; Much improved front-end; Proper installation. *Quake* installation is a non-trivial process, thanks to the files being compressed and split on the CD; and the game will store more information about configuration and so on.

A lot of people have asked for a good front-end and this is very important to us. Improving the installation is also necessary and is actually the biggest thing delaying release.

I'm trying not to use the 'support the market' line, but it is a fact that dealers require significant margins on games, and with that in mind there is no way that we can drop the price too far.

We would hope to release a *Quake*+ upgrade at some point, which also contributes to the drop in price. This may be TBA's *Quake* if it is ever finished, or we may optimise the game ourselves. I cannot see this happening for quite a while, but it is something that I would like to see happen. I feel that the game ought to run smoothly and well on a 233Mhz SA.

AU: What's next on the RCI release schedule?

AR: Your readers know that we're working on *F16* but this is proving tough. The game is up and running, and the resolution and detail are impressive, but the frame rates are low. Peaking at 8fps at the moment, there's a lot of optimisation required.

In some ways I feel that we have swamped the market with titles, so we won't be releasing products quite as rapidly as we did last year. In football metaphor, it was necessary to get our first team up and running immediately, and we can now add players as required. Rest assured that these players *will* be added! I would, however, like to see some of last year's titles sell before releasing more new titles which steal the limelight!

AU: Thanks for taking the time to complete this interview, we look forward to seeing all these new conversions you're keeping secret from us!

AR: No problem! But which conversions? <cough> <grunt> Ah, yes Alasdair, those conversions...

A brief history of 3D walkabouts...

Ever since *Wolfenstein 3D* was released on the 5th of May 1992, what we now know as 3D walkabouts have gone from strength to strength. This genre of games basically involves moving around a simulated world killing anything that obstructs you and solving a few puzzles along the way. The progression from those early days through to the current state of the art on the PC, the Quake III engine test is illustrated well by the screenshot below.

ID Software (and John Carmack, 3D engine coding guru) are almost the unrivalled masters of this domain, there have been others such as *Duke Nukem 3D* and *Half Life* but none of these have yet made it to RISC OS. R-Comp have stated that a *Duke Nukem 3D* conversion would be possible in theory but they fear that its 18 certificate would cripple sales on such a small platform.

Quake reviewed

R-Comp are now selling the *Quake Resurrection* pack along with a player application for StrongARM Risc PCs for an as-yet unannounced price in the £20 to £25 region. This pack contains three CDs containing level data, one for *Quake* and one for each of *Malice* and *Q!Zone*. *Malice* and *Q!Zone* are both third party modifications to the original game and are bundled with the RISC OS release in a similar fashion to other R-Comp

conversions. They each constitute complete new level sets so are considered separately here.

Quake

Quake is a first-person 3D shooter from id Software, producers of such smash-hit first person games as *Wolfenstein 3D* and the *Doom* series. Sensible game plots have never been id's strong point so I'll spare you the details on this one. All you need to know is that some guy by the name of *Quake* has started pumping his baddies through slipgates (read: teleporters) into some military bases.

Playing *Quake* is a completely different experience to *Doom* or other earlier incarnations of this genre. The game's engine (the bit that does all the clever stuff) is far more advanced and allows for such things as jumping, freedom of vision (your character can look all around, and is not restricted to looking solely in the direction of travel) and last but not least, proper 3D levels which can now have floors overlapping each other.

As well as featuring a very nice engine, the gameplay itself is also very good. The game offers a very nice range of weaponry including a grenade launcher and a rocket launcher, two of my personal favourites. The super nailgun is a lethal weapon if there ever was one but unfortunately the supply of ammo is somewhat limited in most levels. That's not a bad thing though, in fact it is perhaps one of *Quake's* strong points because there isn't always loads of ammo lying about so it's necessary to conserve it at times. Your adversaries in *Quake* are both imaginative and well-drawn. The mixture of close range nasties which need to get right up to you to cause damage and long range ones makes gameplay challenging in places. The situation often arises where you'll get attacked by monsters on the ground at the same time as having things fire down at you from above. Add to this the all-new ghost-type nasties which fly about while spitting down on you and you'll get some pretty interesting situations.

The level designers have used this range of monsters to give a very challenging gaming experience. Certain creatures will even reincarnate unless physically blasted to bits by a rocket or grenade.

One of *Quake's* main down sides is that the monsters still jump out in front of your gun. This does get a little tiresome after playing through other games of this nature. Why, oh why, don't they hide and use cover to their advantage rather than just waiting to be killed? This has been achieved in games on other platforms to great effect and it really does make the game feel that bit more realistic.

Quake features a nice system of power-ups. Different grades of armour may be gathered up along with a massive health bonus which grants the user 200% health (how this works in real life, I don't know). The other bonuses such as the bio-suit to protect from drowning and the *'Pentagram of Protection'* also add a little something to the game.

However, the most noteworthy bonus has to be *'Quad Damage'*, this affords the bearer's weaponry four times as much punch as is normally experienced. This renders the lower-grade weaponry such as the double-barrelled shotgun useful once again later on in the game. Plus, it's bloody good fun to be able to strafe with the super nailgun and wipe out a whole room full of baddies then continue merrily on your way.



Quake III: still undergoing testing on the PC, you'll have grandchildren by the time this one's playable on your Acorn. A Pentium III 450 and a meaty graphics card is needed before it will even consider running on the dark side.

Quake's levels are organised into episodes, each of which features a fitting finale leading up to the final level where you're pitted against the mother of all baddies, Shub Niggurath. I won't spoil this bit but when you come to it, perhaps try methods other than simply discharging all your ammo at the beast.

No review of *Quake* would be complete without a mention of its multi-player capabilities. OK, so *Doom* included multi-player support but *Quake* really is an exhilarating experience when played against fifteen or so mates over a network. The game is just so flexible and the add-on system allows for far more tactical game play thanks to the addition of 'capture the flag' and paintball-type variants.

The RISC OS conversion of Quake currently supports a range of network play options but, unfortunately, it lacks compatibility with *WinQuake*, the PC multi-player version commonly played over the Internet. Serial cable, modem and network play are supported as is Internet play on servers which don't rely upon *WinQuake*.

In addition to its support for third party levels, *Quake* also features its very own variant of the C programming language: *QuakeC*. This allows for the addition of comprehensive new features to the game. Most are only useful in multi-player situations but a few such as weapon modifications and bots (simulated human opponents) can be put to ample use, even without access to more than one computer. This feature along with *Quake's* excellent multi-player experience must be what has made the game so popular in the PC market and is sure to affect the RISC OS gaming community too.

Not all additional levels and *QuakeC* patches will work with the RISC OS conversion of *Quake*, but most well-written ones will be fine. Be sure to check out the selection at Acorn Arcade's own Quake site should you buy the game.

The current RISC OS implementation of *Quake* is currently available in two forms. There's the freeware player app which is on slightly dodgy legal ground and also R-Comp

Interactive's own commercial product which is basically the freeware player bundled with legitimate level files in a deal sanctioned by the original publishers, GT Interactive. You'll have to pay a little more for the R-Comp product over the price of buying the PC pack on the high street. However, you will benefit from a proper installer, technical support, windowed play, a slightly improved engine and compatibility with *Malice* and *Q!Zone*, both of which are well worth acquiring.

It looks like we're stuck with this situation until Martin Piper has time to complete his implementation of *Quake* for RISC OS. Unfortunately, the R-Comp product is currently only playable in low resolution and lacks the improvements over the original PC incarnation which we've seen in other R-Comp conversions. Development is still continuing though. At the time of writing, the engine does have a tendency to crash every now and again but the game is still playable albeit with regular quicksaves.

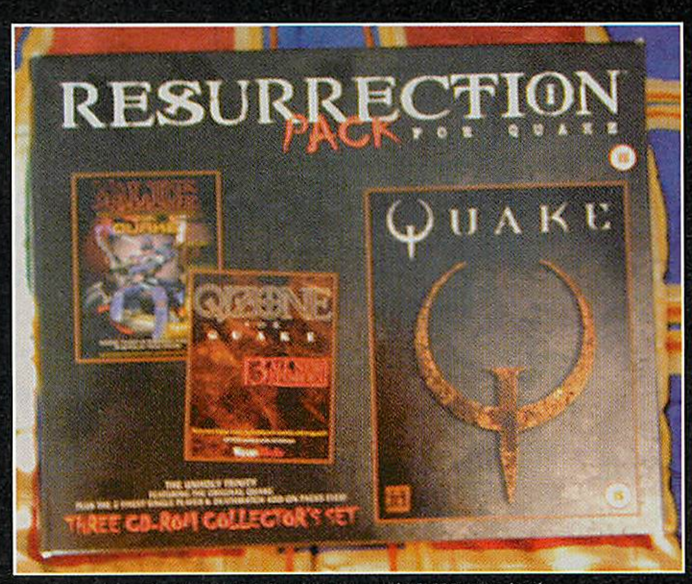
Malice

Malice is billed as a completely new game based upon *Quake's* engine and it is, more or less. Almost every aspect of the gameplay is changed including all weapons, monsters and levels.

The basic plot behind *Malice* goes something like this: you're a hired mercenary working for the interests of a huge corporation by the name of B.O.S.S. Your work for them entails killing lots of bad guys. Haven't we been here before?

Unlike its host game, *Quake*, *Malice* treats the player to a nicely made full screen intro sequence before the game kicks off. The movie gives the player a good overview of the storyline as well as having a subtle stab at the original game through a scene where your *Quake* character is blown away by our new heroine, *Damage*. Unfortunately, the intro movie uses the game engine for real-time rendering rather than a dedicated movie player so things can get a little slow.

The new monsters offer a rather refreshing change after defeating the populous of *Quake*. The weapons also provide for some light refreshment with a nice flame-thrower (fire extinguishers also provided) and a decent shotgun thrown in for good measure. The need to re-load some weapons manually adds to the realism but can be annoying if you like your rounds fast.



Quake jumps on the resurrection bandwagon – only 2,000 years late!

Another major feature of *Malice* is the addition of 'toyz' – don't worry, I can't stand people replacing s with z to make things sound cool either. These are bits of kit which will come in handy during your assignment with B.O.S.S. There are five 'toyz' at your disposal, one of the most original being a probe which may be piloted around the level scouting out enemy positions prior to your assault. I won't list the others here but they do add to the game in a special way and the additional keys to cycle through and use them are also a boon.

A couple of the more dubious items to be found in Quake and other games of this genre have been stripped away for *Malice*. For starters, the *Mega-health* bonus is gone, hands up those who understand how one may pose 200% health! The *Pentagram of Protection* and *Quad Damage* will also be missed by some but have been removed for the simple reason that they act against fair play in the eyes of the authors.

Overall, *Malice* is a very worthwhile addition to this pack and it could almost be argued that it's more playable than *Quake* itself. However, it is worth pointing out that the game runs a little slower than *Quake* but this isn't a major issue unless you have a real problem with playing on a slightly lower resolution.

Q!Zone

Q!Zone doesn't go quite as far as *Malice* in altering the game's play and feel. In the trade, it's referred to as a *partial conversion* because unlike *Malice* (a *total* conversion) not every aspect of the game is changed.

The changes do include a completely new set of levels, four new monsters and also one new weapon.

Q!Zone's levels do play well but their design is perhaps a little inferior to that seen in *Quake*. The new weapon replaces the rather under-powered standard nailgun with a nice little number which fires spiky discs. It might not sound much but they do bounce around corners – a definite bonus over the old nailgun. The other weapons remain unchanged from the original game.

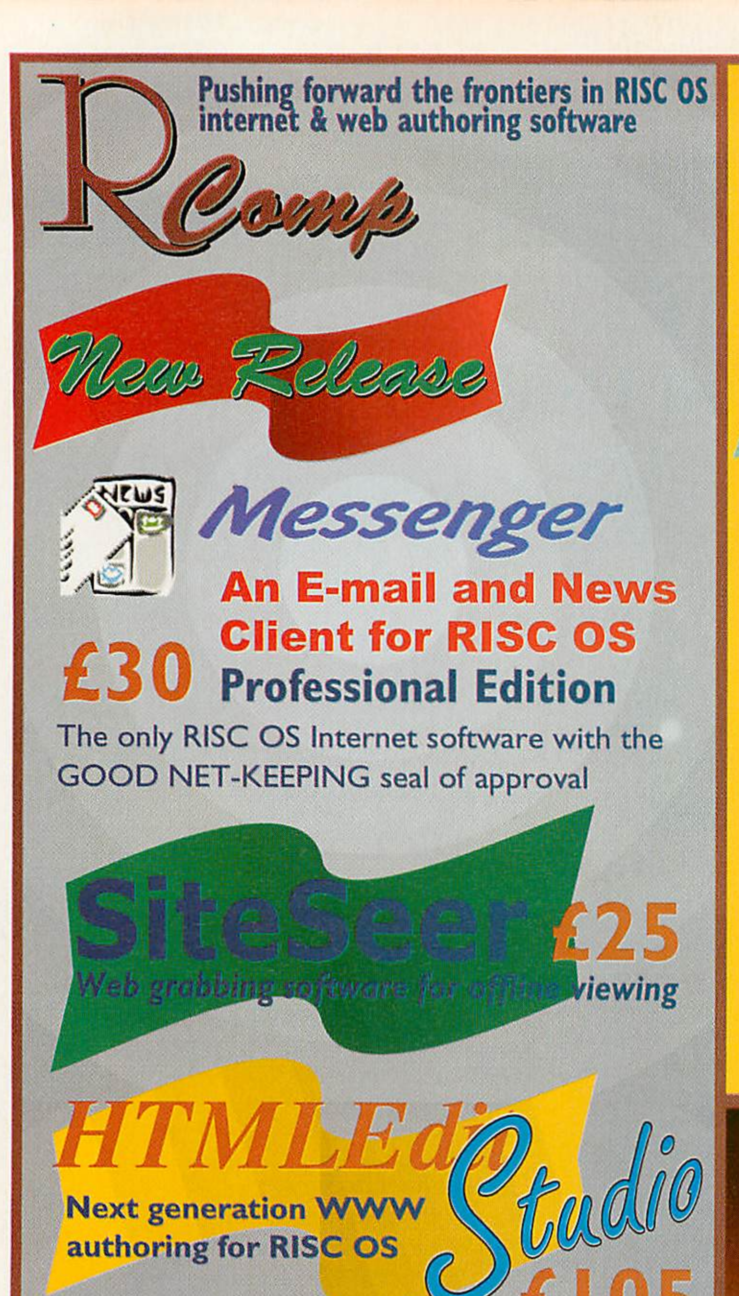
The new monsters aren't really much to write home about. Many are brightly coloured and whether this is through diet or breeding, it does make them look odd alongside the surviving *Quake* monsters.

Q!Zone is definitely worth a look. Perhaps play through the slightly superior *Malice* and, of course, *Quake* first though.

END

Product details

Product:	Quake Resurrection
Price:	around £20-25
Supplier:	R-Comp Interactive, 22 Robert Moffat, High Legh, Knutsford, Cheshire WA16 6PS
Tel:	01925 755043
Fax:	01925 757377
E-mail:	rci@rcomp.co.uk
Web:	http://www.rcomp.co.uk/



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Distributors for ARTEX: Ankh, Exodus
PRO ACTION: Various titles

22 Robert Moffat, High Legh, Knutsford, Cheshire WA16 6PS
Tel: 01925 755043 Fax: 01925 757377 Email: rcomp@rcomp.co.uk rci@rcomp.co.uk


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The last year has been a difficult one for the RISC OS market and if you were that way inclined it would look like the death knell had finally sounded for the most user-friendly operating system in the world.

But the non-appearance of the Phoebe Risc PC 2 and the disappearance of Acorn have instead resulted in the re-birth of a market long-suppressed by Acorn's unwillingness to take chances and invest in the future.

What has happened is that the operating system has been licensed and RISC OS 4 released – along with a roadmap for future developments that will finally break free of the hardware stranglehold that has always made Acorn machines so expensive to buy.

Simply plugged into existing hardware (the Risc PC, A7000 and A7000+) RISC OS 4 gives increased speed and great new features, but coupled with the new machines being released we can once again jump into the mainstream of power computing.

At least three companies are releasing new hardware: firstly, two affordable machines based on the ARM7500 chip (now being allowed to run at full speed) and bringing new industry standards with them – the USB system for plugging in peripheral devices and PCI to allow PC-cards to be slotted straight in. These two options alone open the RISC OS world to vast amounts of previously unusable hardware.

Then there is the Risc PC replacement motherboard that promises to take the system to new heights of power by removing the bottlenecks and providing virtually unparalled video and audio power.

Along with this new hardware is the software: Companies such as R-Comp, Icon Technology, Cerilica, Spacetech and many others provide the software that we have used and still use – but they are not resting on their laurels. More software is being released every month, as well as upgrades to existing products. Then there are the user groups: The ARM Club, of course, are still going strong as is the Association of Acorn User Groups, run by Neil Spellings, with its ever increasing number of associated clubs, combining and providing benefits to all the RISC OS clubs across the world.

It's true that the last year has taken its toll, there have been victims of the uncertainty, whether individuals who have turned to the other side or businesses who did not adapt fast enough.

There are those who dubbed the attempts to raise Phoebe from the ashes of Acorn as the Phoenix. But it's not any small group of individuals who are rising up, it's the RISC OS market as a whole – that's you and me – who are the real Phoenix, for coming out of those dark days and making RISC OS live on.

Welcome to The ARM Club's *RISC OS '99 Show*.

Steve Turnbull
Editor, Acorn User magazine

How to get there

Directions from M25 Junction 8

- Exit at Junction 8 and head northbound on the A217 Brighton Road dual carriageway – signposted A217 Sutton & London.
- Continue northbound through Lower Kingswood and straight ahead at the next two roundabouts – still signposted A217 Sutton and London.
- After 2.8 miles from the M25 take the third exit (straight ahead-ish) at the Tadworth roundabout – still signposted A217 Sutton and London.
- After 1.0 mile turn left at the traffic lights at Burgh Heath on to Reigate Road – signposted A240 Epsom and Kingston (there is a Shell petrol filling station on the lefthand side just the other side of the traffic lights).
- Follow this road across a set of traffic lights (after which the road starts going downhill) and after 0.9 mile turn left on to Yew Tree Bottom Road – signposted B284 Epsom Downs (immediately after the keep left arrows where the main road continues bearing round to the right).
- After 0.5 mile take the second exit at the roundabout on to Grandstand Road – signposted Grandstand and Ashtead.
- After a further 0.6 mile both the Epsom Racecourse Grandstands and Queens Stand are located straight ahead adjacent to another roundabout (the Queens Stand is on the right and is more modern) – nearby car parking will be signposted and marshalled.
- Beware – the A217 is a dual carriageway with a 40mph speed limit and there are two separate police speed cameras located along this stretch of road.

By train

Nearest mainline station is Tattenham Corner





SHOW

The Companies involved

ASSOCIATION OF ACORN USER GROUPS

ACORN USER

The biggest and best magazine in the RISC OS market. Packed with news, reviews and special features. Come to our stand and see what we have on offer for the show. Back issues will also be available, as well as the opportunity to subscribe to the magazine.

Acorn User, Tau Press, Media House, Adlington Park, Macclesfield, Cheshire SK10 4NP

Tel: 01625 878888
Fax: 01625 859808
E-mail: enquiries@acornuser.com
Web: http://www.acornuser.com/

AKALAT PUBLISHING

ALEPH ONE

We continue to supply Acorn computers with the ability to run Windows (and DOS) applications. We offer both Second Processors for Risc PCs and are constantly developing software to support them. Podule Cards are also available for A3x0, A4x0 and A5000 machines. Special Offers are usual at Shows like this!

Aleph One Limited, The Old Courthouse, Bottisham, Cambridge CB5 9BA

Tel: 01223 811679
Fax: 01223 812713
E-mail: sales@aleph1.co.uk
Web: http://www.aleph1.co.uk/AcornProd/

APDL

APDL will have their full range of Acorn CDs, including clip art, PD, games and others, plus hard drives, interfaces, and CD-ROM drives, all at special show prices. You will be able to see the DataSafe parallel port IDE drive system and several new products (hardware and software).

APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN

Tel: 0181 778 2659
Fax: 0181 488 0487
E-mail: info@apdl.co.uk
Web: http://www. apdl.co.uk/

APRICOTE STUDIOS

Apricote Studios will be demonstrating their ever popular accounting applications: Personal Accounts 4 and Prophet3+ professional. They are also hoping to have a new version of Personal Accounts ready for the show which should fulfil a number of 'wishlist' items requested by users (unfortunately the ability to print bank notes has not been completed, but they should save you from paying bank charges by telling you if you are likely to become over-drawn!). Apricote Studios will be situated in the RiscStation Village.

Apricote Studios, 2 Purls Bridge Farm, Manea, Cambs PE15 0ND

Tel: 01354 680432
E-mail: info@apricote.com
Web: http://www.apricote.com/

ARCHIVE

Archive Magazine, the subscription magazine for RISC OS users. New subscribers (£25 for 12 issues) can have a FREE CD (worth £12) which contains huge amounts of RISC OS-related information, several volumes of back issues of Archive, utility programs, PD, etc. Alternatively, try the next four issues for only £4, so that you can see just how good it is.

Archive Publications, 18 Mile End Road, Norwich NR4 7QY

Tel: 01603 766922
Fax: 01603 460736
E-mail: paul@archivemag.co.uk
Web: http://www.archivemag.co.uk/

CASTLE

The Castle stand will feature a wide range of Acorn and other related products. Castle's new build specification Risc PCs in various guises will be available to purchase.

The new A7000+ Odyssey will also be on show. As usual Castle will also be demonstrating its wide range of Scanners, CD Writers and other peripherals and upgrades.

Castle Technology Ltd, Ore Trading Estate, Woodbridge Road, Framlingham, Surrey IP13 9LL

Tel: 01728 621222
Fax: 0800 783 9638
E-mail: jack@castle.org.uk
Web: http://www.castle.org.uk/

CJE MICROS

CTA DIRECT

CTA will have a number of new products for sale. This will include new RISC OS machines, hard drives, CD-ROMS, CD-ROM re-writers, memory for all RISC OS machines, mice, keyboards, MKII Trackball, printers consumables, and many other items. The team looks forward to meeting you at the show.

CTA Direct, 168 Elliott Street, Tyldesley, Greater Manchester M29 8DS

Tel: 01942 797777
Fax: 01942 797711
E-mail: sales@cta.u-net.com
Web: http://www.cta.u-net.com/

RISCSTATION

On show will be the new range of machines including the R7500, the first RISC OS PCI machine, and the RiscStation Network machines. A network of machines running the latest software bundles will be on demonstration. Also the unveiling of new products and enhancements for all RISC OS machines.

RiscStation Ltd, 168 Elliott Street, Tyldesley, Greater Manchester M29 8DS

Tel: 01942 797777
Fax: 01942 797711
E-mail: sales@riscstation.co.uk
Web: http://www.riscstation.co.uk/

CUMANA/CANNON COMPUTING

At RISC OS '99 we will be dedicating the stand to 'Thin Client Technology'. We will be requesting anyone who is in educational circles to come along to the stand to see Citrix and TopCat running both RISC OS and Windows on new and old Acorn/RISC OS machines.

We will also have all of our general products for sale with a bargains being offered at the show.

Cumana, Whitegate, Dunmow Road, Hatfield Heath, Bishops Stortford, Herts CM22 7ED

Tel: 01279 730800/730900
Fax: 01279 730809
E-mail: sales@cumana.co.uk
Web: http://www.cumana.demon.co.uk/

ELECTRONIC FONT FOUNDRY

EFF offers a huge library of high quality fonts, including a wide range of educational, specialist and foreign typefaces and font converting software: EFF TrueType Translator, EFF PostScript Translator and EFF Font Table. The new CD, EFF2 Professional Typography, with 800 fonts in Acorn and Windows format, will be available at the show.

Electronic Font Foundry, 11 Silwood Road, Ascot SL5 OPY

Tel: 01344 875 201
Fax: 01344 875 202
E-mail: sales@eff.co.uk
Web: http://www.eff.co.uk/

ICON TECHNOLOGY

Icon Technology will be showing TechWriter and EasiWriter the powerful, yet easy to use, word processors which have been voted first and second best word processors on the Acorn platform and best commercial software.

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- Style Editor
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Web: http://www.IconTechnology.net/

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Speak software speech synthesiser will 'talk-as-you-type' and read out text for proof-reading. Pluto is a text database and powerful Internet news and mail reader. It can be used to replace Marcel, Posty/NewsAgent and so on

E-mail: jsd@argonet.co.uk
Web: http://www.argonet.co.uk/users/jsd/

MILLIPEDE ELECTRONIC GRAPHICS

The highlight of the Millipede stand will be the Imago Concept Motherboard. Mechanically compatible with the Acorn Risc PC, Imago forms the basis for a number of products to be produced by Millipede. Imago exploits the latest technology to propel RISC OS computing into new and exciting territory. Not to be missed.

E-mail: richard@millipede.co.uk
Web: http://www.millipede.co.uk/

Theatre timetable

	Saturday	Sunday
11:00	Castle Technology	Castle Technology
12:00		
13:00	RISCOS Ltd	RISCOS Ltd
14:00	RiscStation Ltd	RiscStation Ltd
15:00	TopModel	

R-COMP/R-COMP INTERACTIVE

R-Comp will be showing latest versions of its ever expanding range of Internet and Web authoring products. Visitors should expect some exciting new developments, including new versions of WebsterXL and Messenger Pro.

Check out RCI's range of sound and music products, including the powerful Anthem sequencer, for quality and value. Special show offers on graphics tablets too. Oh, and of course, there will be at least one great new games release, but that goes without saying!

R-Comp Interactive, 22 Robert Moffat, High Legh, Knutsford WA16 6PS

Tel: 01925 755043
Fax: 01925 757377
E-mail: rci@rcomp.co.uk
Web: http://www.rcomp.co.uk/

REALLY GOOD SOFTWARE

Launched at the Wakefield Show, NoticeBoard Pro will be featured on our stand; alongside the rest of our range including Picture Book 2, the Triple 'R' Education titles and Notes.

Really Good Software Company, 39 Carisbrooke Road, Harpenden, Herts AL5 5QS

Tel/Fax: 01582 761395
E-mail: sales.rgsc@argonet.co.uk
Web: http://www.argonet.co.uk/users/sales.rgsc/

RISCOS LTD

Visit the RISCOS Ltd stand to see the latest developments on RISC OS 4. Upgrades will be available to take away at £99 + VAT for Risc PC and A7000/A7000+ users. Join The Foundation for £30 + VAT (£25 + VAT for ex-Clan Members if you bring your membership card along).

Get the RISC OS World wallchart for just £4.50, listing all the companies offering products and services for your favourite operating system. We've got RISC OS 4 – have you bought yours yet?

RISCOS Ltd, 3 Clarendon Road, Cyncoed, Cardiff CF3 7JD

E-mail: paul@riscos.com
Web: http://www.riscos.com/

SIMNETT

SOFTEASE

SPACETECH LTD

Spacetech are showing their range of studio-quality graphics software for RISC OS including Photodesk3 with layers. The Digital Art CD-ROM by David Cowell, featuring bitmap and vector graphics tutorials is shown as well as his brand new second CD shown here for the first time. Watch out for the latest in Digital cameras from Olympus including the new C2000 Zoom 2.1 Megapixel compact also a new tiny megapixel camera and a multi-mega pixel replacement for the C1400XL!

PhotoReal drivers for the Canon BJC7000/7100 and BJC2000 will be shown. OHP, the presentation maker for RISC OS is demonstrated with some new features. Some attractive show discounts are offered.

Spacetech Ltd, 1 The Courtyard, Southwell Business Park, Portland, Dorset DT5 2NQ

Tel: 01305 822753
Fax: 01305 860483
E-mail: sales@spacetech.co.uk
Web: http://www.spacetech.co.uk/

THE ARM CLUB

Organisers of this year's show, The ARM Club, will be on hand with membership offers, club products (including the latest PDCD3), help and advice. A year's membership of the leading user group costs only £15 (£12 renewal) and includes four issues of our magazine, Eureka. Watch out for special show offers, or just pop along for a chat!

The ARM Club, FREEPOST The ARM Club

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Fax: 07050 679263
E-mail: info@armclub.org.uk
Web: http://www.armclub.org.uk/

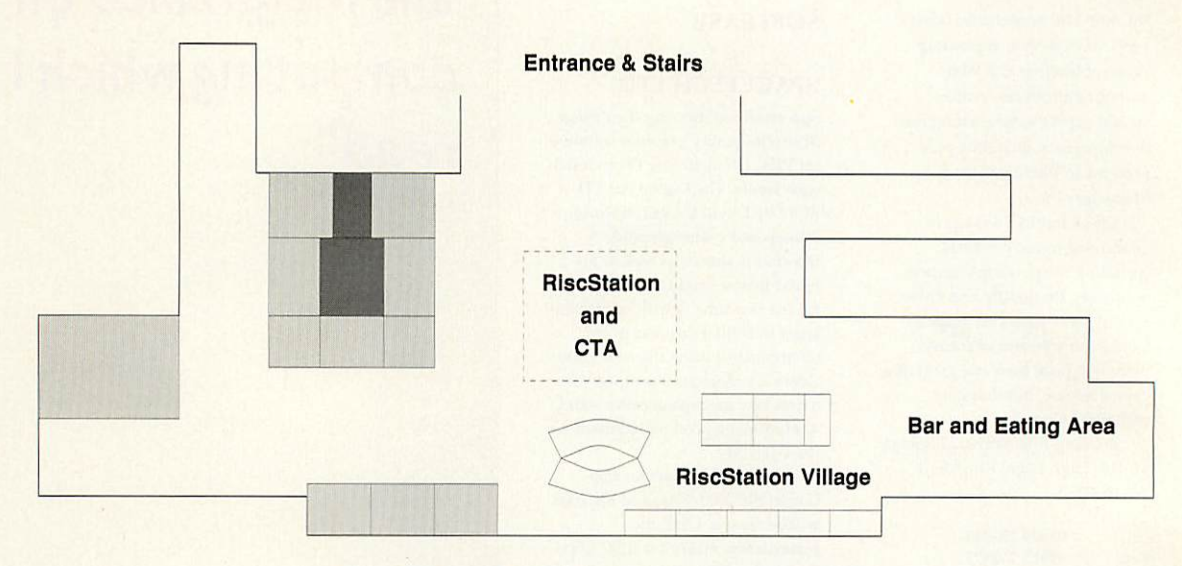
WARM SILENCE SOFTWARE

WSS will be showing new versions of much of their acclaimed software, including CDROMFS (updated to handle Packet written UDF discs), CDBurn, LanMan98 and a new NFS client.

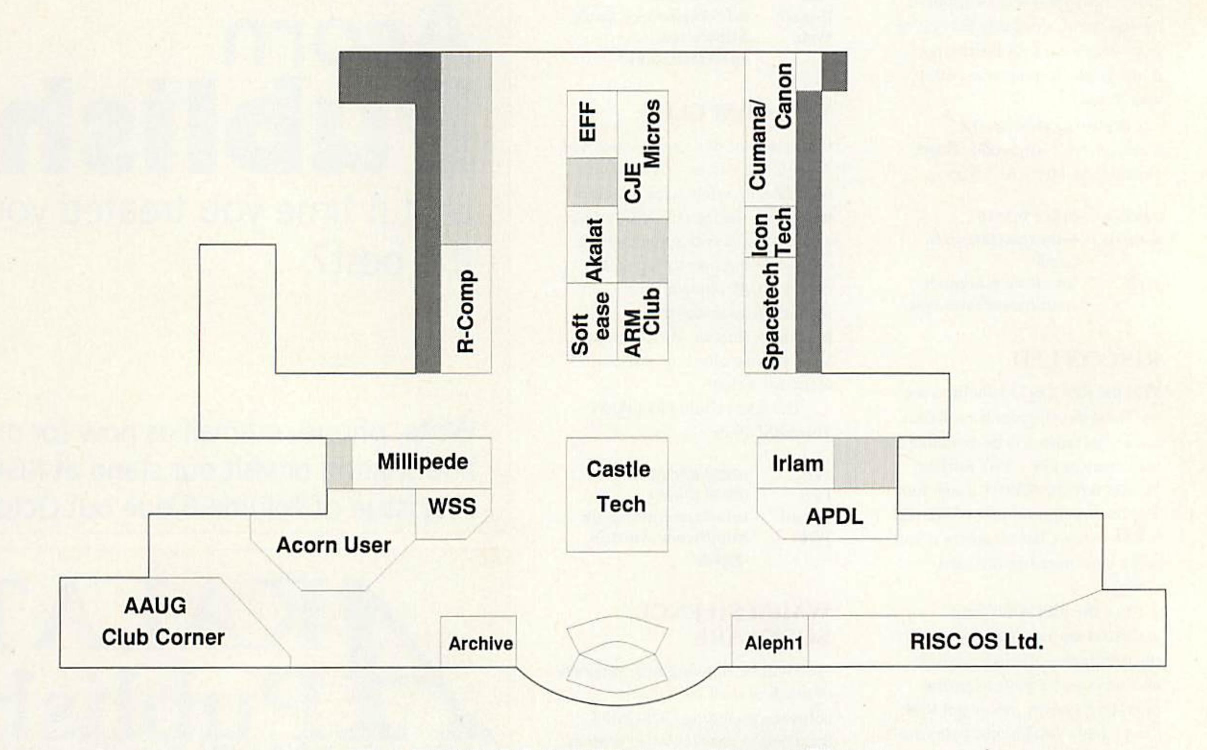
E-mail: robin@wss.co.uk
Web: http://www.wss.co.uk

The Companies involved





The RISC OS '99 Show - Lower Floor



The RISC OS '99 Show - Upper Floor

The RISC OS 99 SHOW

RISC OS Awards

In the best traditions of the RISC OS world you have the opportunity to vote six categories – how you interpret them is up to you and you don't have put an entry if you have no answer.

Send in your answers to *RISC OS Awards, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP* or hand them in to the *Acorn User* stand at the show before midday on Sunday Oct 31st.

Best Dealer	....
Best Non-game software release in 1999	....
Best Non-game hardware release in 1999	....
Best Game release in 1999	....
Most popular RISC OS personality	....
Best Non-game release ever, for RISC OS	....
Best Game release ever, for RISC OS	....


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Draw for designers?

Andrew Green takes a look at an updated package providing new life to Draw

The drawfile in RISC OS is a godsend – a standard way of communicating vector information from one package to another, that doesn't have the fragmented nature of EPS, and manages to maintain bezier curve information (unlike WMF).

Unfortunately, actually having to use *Draw* on more than a purely casual basis can result in bleeding from the ears. iSV's latest incarnation of their illustration software, *DrawWorks Millennium*, promises to alleviate this, by operating as a welcome adjunct to *Draw*, and providing a vastly improved feature-set to boot.

Figure I: The DrawWorks Millennium toolbar

The software comes on a CD and includes a wealth of subsidiary applications from the iSV stable: the love-it-or-hate-it clip-art manager, *Mr Clippy*; the outline font editor, *Dr Fonty*; 2100 high-quality outline fonts with an associated installation manager and viewer, a selection of vector and bitmap clip-art, together with one of the best help systems I've seen for any collection of software. All in all, this is a huge package.

At the core of the product, though, is the new version of the *DrawWorks* application itself. *DrawWorks* provides an additional set of functions to *Draw* – it isn't a complete vector art package in its own right. Nevertheless, these functions range from the trivial to the impressive, and by making use of the *Draw* interface, iSV can guarantee a certain amount of familiarity with the way the software can be expected to work.



Figure II: Top Tips

Running *Draw* with *DrawWorks* loaded produces an additional toolbar (Figure I) at the top of the window. This toolbar disappears when the input focus is in another application's window, and if you move or resize the *Draw* window, the toolbar hovers in its original place for a while and then jumps to the new position.

This is hardly a problem, but can be a little disconcerting at first, and emphasises the parasitical relationship between *DrawWorks* and its host, *Draw*. Happily, though, the toolbar can be dragged away from the main *Draw* window if required.

Toolbars and tools

DrawWorks splits its functions into a number of principle areas: File, View, Text Style, Object Style, Grid Settings, Select and Edit, and a couple of special ones I'll describe later. The top row of the *DrawWorks* toolbar is used to navigate between these areas, whereas the bottom row features the actual functions in each. Sensibly, the bottom row features a horizontal scrollbar to allow access to buttons that don't fit into the window you're using. Many of the functions to which *DrawWorks* provides toolbar access are functions of *Draw* itself – but having a simple system to get at quickly with the mouse can be extremely useful.

DrawWorks' Select and Edit toolbar provides shortcuts for copying, grouping, interpolating, and adjusting the stacking order of any selection you've made, allows quick access to line editing functions (change line to a curve for instance), and allows certain operations to be undone.

It would be useful if the toolbar greyed-out functions that aren't available in the current context. Similarly, many of *DrawWorks'* path editing buttons, such as the (very useful) ability to enter the X,Y co-ordinates of a point, cannot operate when creating a path, only when editing it subsequently. This is a minor user-interface niggle, but would help with the responsiveness of the package as a whole.

There are other quirks to *DrawWorks'* user interface – not least of which is the 'Top Tip' the package provides on startup (although this, thankfully, can be turned off). The File toolbar, which provides access to import and export features, includes an 'Insert Named File' button to allow non-drag-and-drop insertion of elements to a page, which would appear to be contrary to the typical



Figure III: The file import mechanism

Figure IV: The results of exporting as an anti-aliased sprite

RISC OS ethic (although *Edit* has it too) – it's nevertheless a feature which works very successfully, should anyone want to use it.

Import and export

The toolbar provides a convenient way of importing foreign file formats into *Draw*, through the use of an additional dialog window for drag-and-drop purposes. It's a somewhat non-standard method, as dropping documents into the main window would be the conventional way of achieving the desired result, and all this further underlines the status of *DrawWorks* as an add-on to an existing program.

That said, it's hardly a great inconvenience for being able to achieve easy file import without needing programs such as *ImageFS*, and works very well for most of the formats it claims to. I had no problems importing TIFFs, WMFs or BMPs this way. I did, however, struggle greatly with the import of anything beyond the simplest of EPS files (even ones *ArtWorks* manages to cope with).

Some files rendered correctly, while reporting an error, and other files rendered incorrectly, or not at all – regardless of whether the EPS included a preview image or not. However there is a patch on iSV's Website that improves EPS import and export.

Sadly, *DrawWorks'* EPS export facility is also troubled. It's a great shame about that, as the ability to deal with EPS images would initially have appeared to be one of *DrawWorks'* great strengths. EPS files are a standard way of delivering vector images from one package or platform to another – although they come more-or-less in just as many varieties as there are packages which handle them.

I tested an EPS exported from *DrawWorks* in a number of Windows applications (perhaps a Mac would have been a more useful real-world test of this, however), and some packages coped well, others didn't. *FreeHand* and *Flash* rendered the file admirably, *PageMaker* gave up and just displayed the dreaded grey box (indicating that it couldn't build a successful preview image), and *Ghostscript* failed altogether, reporting errors in the PostScript code.

The patch to *DrawWorks* available from the iSV Products Website was unable to help with the files I tried, unfortunately.

iSV say that this problem is not theirs, the output is based on Adobe's own documentation but there have been undocumented changes in the various target applications. What's certainly the case, is that *DrawWorks* suffers from the same problem *ArtWorks* does, in that its EPS export facility doesn't ever include a preview image within the file. *DrawWorks* contains tools to allow the creation of sprites, GIFs and JPEGs from any selection on the canvas. Sprites and GIFs can be anti-aliased (JPEGs sadly can't), but it's first necessary to drop down to a 256-colour screen mode to achieve this – images acquire a strange yellow hue if you don't.

Certain colours respond very poorly

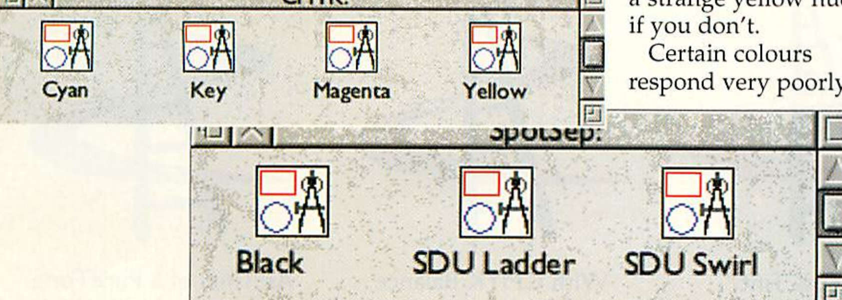


Figure V: CMYK and Spot colour separations windows

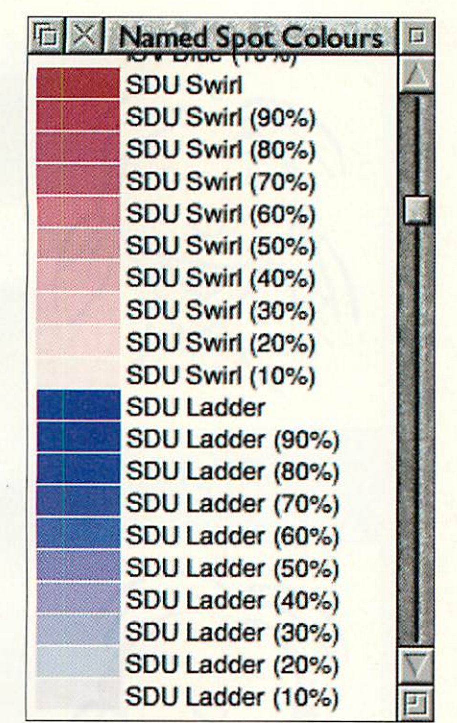


Figure VI: Auto-generated tints of named colours

to this approach – Figure IV shows the result on two test images. The girl's green face is an artefact of the dithering required for a 256-colour image.

Because *Draw* can't edit bitmap images, except for scaling and rotating effects, *DrawWorks* conveniently introduces a bitmap OLE (Object Linking and Embedding) tool. Any sprite image selected when using the tool is exported to *Paint* or, with a bit of preferences jiggery-pokery, *Photodesk* – and when returned retains its original position, scale and rotation (this will soon work for JPEGS as well).

This is a strong feature for an illustration program, and emphasises the way in which RISC OS applications can be expected to work happily alongside each other.

Colour editing

DrawWorks provides an excellent range of colour generation, selection and manipulation tools in its own special toolbar, that push this application into the *Actually Very Useful* category. To begin, the program comes with a set of colours named *PureTint* pre-installed – colours which bear an uncanny resemblance to Pantone, without any noticeable trademark infringement. A very happy coincidence indeed.

The application also provides a straightforward method of introducing named colours to *Draw*, any of which can be treated as an individual spot colour. Sadly,


Original


On Tinted Stock


Colour Balanced


On Tinted Stock

Figure VIII: Printing on tinted stock

PureTint colours don't seem to respond as spot colours which would initially have appeared to be their primary use – however there would be a silly increase in separations if the colours overlapped.

Nonetheless, *DrawWorks* can create new named colours from a selection (and, very usefully, generate 10% tints of such colours automatically), creating spot colours from a specific PureTint tone is made easy, allowing PureTint tones to be used for more general colour purposes.

Although *DrawWorks* refers to named colours as 'Named (Spot) Colours', it doesn't seem to be the case that named colours *have* to be treated as spot colour separations. The application provides two methods of generating separation files – as standard CMYK components, or as spot colour separations. Named colours appear in both, but only named colours can appear in the latter.

The separations thus generated appear in their own pseudo-filer window, and thoughtfully the software allows grey component compensation – meaning that the muddiness that can occur when equal values of cyan, magenta and yellow are combined is largely avoided.

I re-coloured a simple logo design using PureTint colours, and only the black lines of the swirl produced a spot colour separation. Converting from the PureTint colours to named colours produced both CMYK and spot colour separations properly (Figure V), and Figure VI shows the resultant new named colours. These colours, incidentally, are stored within the application itself, rather than on a file-by-file basis, meaning that any named colours you define can be transferred to other files with supreme ease.

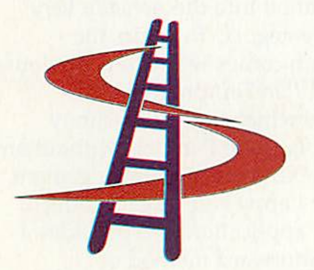
Further colour tools include the ability to adjust the contrast, brightness and tint of any selection, including the ability to colour an entire selection as tints of a further colour. There's also a few bizarre options available as standard (tinting a selection to seemingly-random PureTint tones, or psychedelic colours, for example), but in general all these tools work magnificently – and work on non-JPEG bitmaps too, such that *ArtWorks*-like contone effects can be achieved with ease even on non-greyscale bitmaps. I wouldn't recommend random colours on a bitmap, though.

Figure VII shows a few transformations applied to the same logo. Happily, the Undo function seems to work on all of these tools – allowing for easy experimentation with settings – unless you're transforming a bitmap, which probably has everything to do with the complexity of such an operation and the size of *Draw's* undo buffer.

Not so happily, the program consistently decides to de-select any objects to which a transformation is applied, meaning that multiple transformations require re-selecting everything. Again, this is hardly a big deal – but it could eventually prove to be infuriating.

Special features

The package offers a method of simulating the results of printing objects on coloured paper, together with a simple technique for

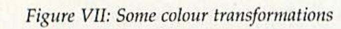

The Original Logo


As a 60% Tint


With CMYK Balance


As Tints of a PureTone

Figure VII: Some colour transformations



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Revision 18

Figure IX: The text style definitions window

compensating the colours of the objects so that they retain their original tones on such paper (as much as is possible). Figure VIII shows this in action.

Unfortunately because *Draw* can't compensate well for the difference between screen representation of CMYK colourspace and the real thing, it's always possible that the end result would suffer a marked difference in colour from the screen appearance.

A further boon to *Draw* users is the incorporation of text styles, which can be defined from the current selection, and applied to any subsequent text object. The style system even accounts for shape transformations such as rotation and scaling (although the syntax for manually defining these could take some learning). There are also tools for applying kerning to any selection of text, and to generate a text spiral – which to create by hand would be a chore of the highest magnitude.

In that vein, *DrawWorks* offers a great many distortion and transformation features through its *DrawWorks Millennium* 'Special' toolbar. Instant drop-shadows can be added to a selection – including floor shadows and 'in the air' shadows – although the shadows thus generated don't have soft edges.

That's hardly surprising, but if the program were able to achieve this with the ease it currently offers, it would be worth the asking price alone. Well, nearly, anyway.

The bulk of the Special toolbar is dedicated to the purpose of distorting objects according to defined, and definable, parameters. Objects can be moulded along a path, subjected to 3D transformations (such as being projected onto a sphere), scrunched, curved, mirrored, distorted to a bump map, and generally beaten senseless in the name of design.

Figures X and XI show a couple of the effects easily applied this way. These features are a great strength of the package, and offer a degree of flexibility and experimentation hard to beat.

Figure X: Instant Elaine-from-Ally-McBeal

The verdict

Although graphics professionals would be by-and-large disappointed with the limitations of the package imposed by its reliance on *Draw* (an abomination of a path editor, weak undo capabilities and complete lack of screen anti-aliasing – none of it *DrawWorks'* own fault), together with frustration at some of the features of the program that fail to work correctly in many places, such as the export of EPS files or bitmap images, there's enough in this package that delivers interesting and useful results to make it worthwhile.

If you simply need a program for illustration purposes on a more occasional basis, there's plenty that *DrawWorks* offers to make use of *Draw* just that little bit more enjoyable, more productive, and frankly more of a viable proposition.

In combination with something such as *ArtWorks*, *DrawWorks* could come into its own. Its distortion and colour toning capabilities are very useful additions to your repertoire, and the application provides enough features that *ArtWorks* doesn't to make it a sound investment.

There's no doubt that the package represents phenomenal value for money, especially when you consider the extra software, and the huge number of fonts, supplied with the core program. User interface irritants and troublesome features aside, this new version of *DrawWorks* has much to recommend it. END

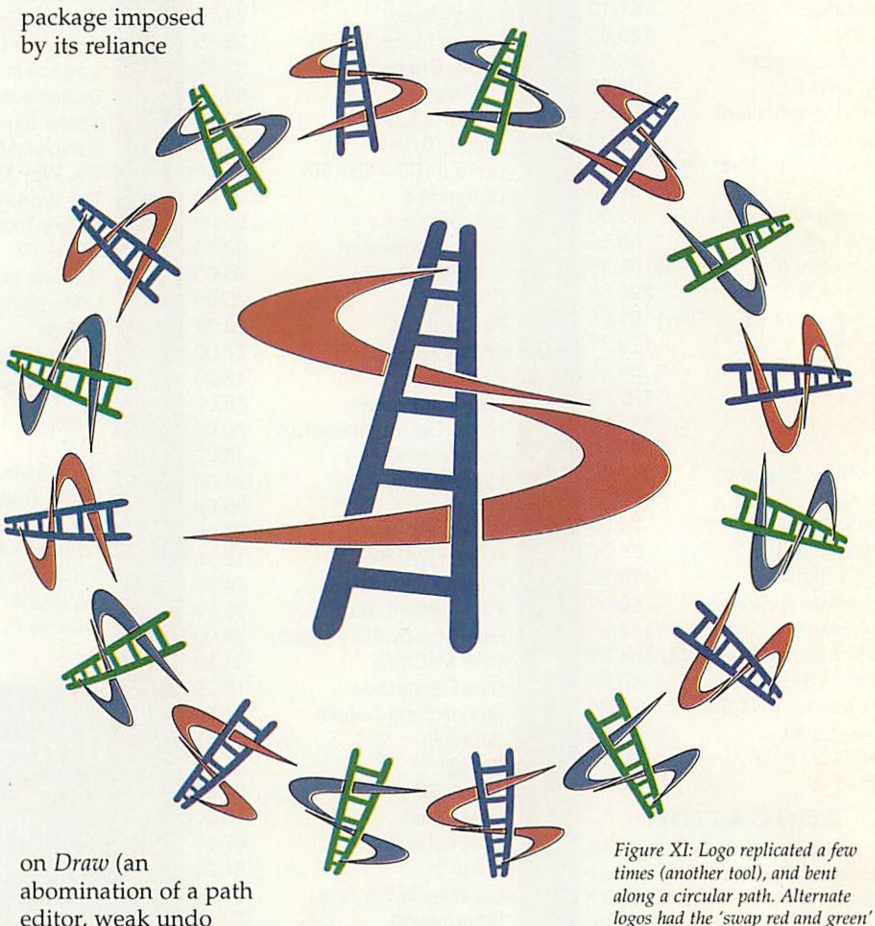


Figure XI: Logo replicated a few times (another tool), and bent along a circular path. Alternate logos had the 'swap red and green' colour effect applied.

Product details

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Oops a-

Greg Scott continues his foray into OO programming

Last month, we saw how virtual functions were used to achieve run-time polymorphism, or what is known as "late binding". This is opposed to normal "early binding" – events and function calls which occur at compile-time.

Virtual functions give greater flexibility, because the object type to be called is not resolved until run-time. You might recall that we handle virtual functions via a base class pointer, and that the function to be called is governed by the type of object it points to (which may be a derived type). Because this can't always be assessed at compile time, the object-function link must be made at run-time.

Virtual functions allow the programmer to define from a single foundation class, a "chain" of derived class types which can all be accessed as if they were equivalent (Figure I). This is a direct application of the "one interface, multiple methods" philosophy of OOP which is used in a moment for the project.

Pure virtual functions

It is often the case that we don't need to access the base class, and that it is used as a template for subsequently derived types, each with their own redefinition of virtual functions. To ensure that all derived classes do provide their own version, we use a pure virtual function within the base class. It has no definition, just the prototype and parameter list. Here is an example:

```
class base
{
public:
virtual void check(int value)=0;
};
class tens : public base
{
int n;
public:
void check(int value)
{ if(value>n)printf("greater than\n"); }
};
```

To declare a virtual function as pure, we add "=0" to the end of the function prototype. If we hadn't provided a new version of *check()* in the *tens* class, a compile-time error would have resulted.

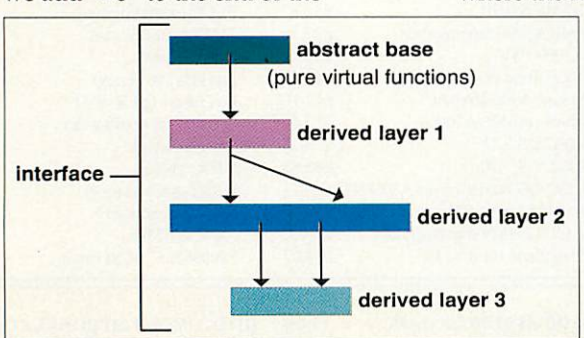


Figure I: A common interface to derived class types

Because the base class contains a pure virtual function, we call it an *abstract class*. Instances of an abstract class can't be created because pure virtual functions do not have function definitions. However, pointers and references to an abstract class are allowed, and by reassigning pointers to derived objects, run-time polymorphism is achieved.

Project Matrix

Our project is a Matrix Class Library in C++. C++ lacks any native support for matrices whatsoever, so it make sense to account for them. Matrices are used in many scientific fields, from fluid dynamics to population modelling. Although a description of a matrix was given in the earlier stages of development (found on past coverdiscs), Figure II illustrates some of the basics.

So, on to the system design of things. At this stage we must consider the objects which we shall use to represent different entities within our library. Square Matrices – where the number of columns and rows is the same – are most common, but we must allow facilities for extending classes to cater for individual needs.

Our class structure will eventually follow the diagram shown in Figure III. All class types will be derived from the abstract matrix class. By using this system of inheritance, all classes within the library belong to a single, root interface, so run-time polymorphism can easily be facilitated.

$\begin{pmatrix} 2 & 0 \\ 0 & 2 \end{pmatrix}$ 2 x 2 matrix

$\begin{pmatrix} 0 \\ 2 \end{pmatrix}$ 2 x 1 matrix

matrix types (rows x columns)

$$\begin{pmatrix} 3 & 1 \\ 1 & 3 \end{pmatrix} + \begin{pmatrix} 2 & 0 \\ 0 & 2 \end{pmatrix} = \begin{pmatrix} 5 & 1 \\ 1 & 5 \end{pmatrix}$$

addition (add corresponding elements)

$$\begin{pmatrix} 3 & 1 \\ 1 & 3 \end{pmatrix} \times \begin{pmatrix} 2 & 0 \\ 0 & 2 \end{pmatrix} = \begin{pmatrix} 6 & 2 \\ 2 & 6 \end{pmatrix}$$

multiply (times row by column)

Figure II: Simple matrix operations

You will also notice the inclusion of the coordinate derived types. Matrices by themselves cannot be used to great effect, they can only alter and operate on themselves. To make proper use of matrices, we need to incorporate external data. Commonly, particularly in mathematics, matrices are used in conjunction with coordinates in two or three dimensional space.

Readers of the old *Info pages should remember countless graphical demos making use of matrices in this way, and we shall do the same. Two dimensional coordinates are treated as 2 x 1 matrices, and three dimensional coordinates as 3 x 1 (see Figure IV).

Let's take our first look at some real working source code. We'll start with the definition of the abstract matrix class.

```
class matrix
{
  protected:
```

daisy

```
    float x1,y1;
    char *name;

    public:

    matrix()  { name=0; }  // name to 0,
  no name.
    virtual   display_as_text()=0;
    virtual   input_text_values()=0;

    name_it(char *str){ name=str; }
  };
```

The first thing to notice about this base class is that no elements are declared as private. This should, by now, make perfect sense – private elements are not directly available to a derived class.

The variables *x1,y1* and *name* are the three protected members of the matrix class. These variables will be found in all subsequent derivations, which implies that all matrix types will have at least two elements and a naming facility. Notice the use of floating point variables.

The public functions laid out by the base class act as an interface to programs making use of the matrix library. A simple constructor is included to act as a default for later classes – some readers may have questioned the role of a constructor function within an abstract class (instances of which cannot be created).

The two pure functions are used to display and change each of the values of the matrix. They are declared as pure (with no definition) because at this stage the size or content of the matrix is not declared, so no provisions for input or output can possibly be made. The thing to appreciate is that by declaring the functions at the base of the structure, all following class types will make use of these function names – a re-occurrence of the one interface, multiple methods philosophy.

The last function declared is used to name the matrix itself, a feature which could be helpful if the library were used, say, in a teaching environment.

Before considering the next layer in the class structure, C++'s input and output facilities must be explained, because the library will make used of them.

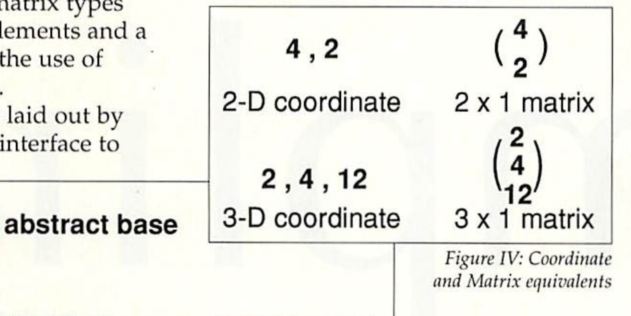


Figure IV: Coordinate and Matrix equivalents

matrix — abstract base
two_x_two
three_x_three
four_x_four
coordinate_2d
coordinate_3d
arrow indicates derivation
derived types

Figure III: Class structure for the Matrix Class Library

C++ I/O

Without spending too much time on the subject, C++ I/O is based around streams. Streams were used to an extent in C, to distinguish between types of input and output. C++ uses streams to achieve all interfacing – file, keyboard – any input and output devices.

For text I/O, we must make use of the *cout* and *cin* functions, both defined in the iostream.h header (which is now included in our source code) these make use of operator overloading to provide an elegant interface. The logical shift operators '<<' and '>>' are overloaded for output and input respectively. Here are some output examples:

```
cout << "Hello, Acorn World!";
```

Writes 'Hello, Acorn World!' on screen

```
cout << "OOP\nArticle number 5";
```

The \n adds a new line.

```
cout << "Text can be " << "Separated";
```

Writes 'Text can be Separated'.

The overloaded shift operator makes this new form of output far easier to comprehend than the old printf() method. To output the contents of a variable we need only specify its name instead of string constants:

```
cout << "The variable value was " << n;
```

Input is achieved using cin and the opposite shift operator:

```
cin >> x1;
```

Gets a value (after enter is pressed), stores in x1.

```
cin >> x >> y;
```

Gets two values, stored in *x* then *y*.

This is a much more attractive method than the C's *scanf()* implementation. It used to be that the address of a variable was required for input. The new characteristics of C++ means there are now ways around this syntax.

The Matrix Class Library will not use more complicated forms of text input and output. END

Sampling made

One of Irlam Instruments' recent releases is a sound sampler, called i16. It fills a gap for those who want this facility, but do not need anything as comprehensive as Irlam's video/audio product 24i16. It comprises an expansion card plus software on floppy disc, and can be used to save analogue sounds from any normal stereo or mono source, such as CD players, radios, microphones and computer sound outputs.

It can also handle digital audio (from DAT recorders for instance), and will run in Risc PC, A7000, A5000, and A300/400/500 machines with RISC OS 3.10 or later. Minimum system requirements are 2Mb RAM and a harddisc. Captured sound samples can be stored as Wave files or in Replay format.

Like all Irlam products, i16 is easy to install and use. It has an on-screen manual, currently being expanded – the tiny screen text is unreadable, but any or all of its pages can be printed out to A4. Limited space on the expansion card dictated 3.5mm stereo sockets for analogue input and output, and an additional socket is provided for the computer's headphone output.



Figure 1: Settings for a sampling run in the Audio Choices window

Phono sockets are used for digital input and output signals. A MIDI connector is provided for a possible future expansion, but has no function at present. Mono inputs are accepted from the left channel only, but play back through both channels.

i16 has two windows, shown here. One handles various options, and the other collects the sound samples. The first, headed 'Audio Choices', has sliders to adjust the signal levels for recording and playback modes separately. Above each slider is a stereo balance control.

The sampling format can be chosen from 16-bit linear, 8-bit linear or 8-bit logarithmic. 16-bit is the industry standard, used in CDs and DAT recordings. 8-bit linear gives audibly poor sound, but needs only half the memory. 8-bit logarithmic takes the same memory as 8-bit linear, but gives better sound quality.

Sampling for quality

The fidelity of the recorded sound depends on the sampling rate, which is the number of times per second that the sound wave amplitude is measured. A well-established rule states that the sampling rate must be at least twice the highest frequency to be sampled, for accurate reproduction. This applies to random noise, but music may contain steady tones, which theoretically require sampling at three times their maximum frequency.

The industry standard rate is 44,100 per second, which allows frequencies up to 14.7KHz to be rendered precisely. With a maximum sampling rate of 50,000, i16 can handle 16.7KHz, giving excellent sound reproduction. In fact only a

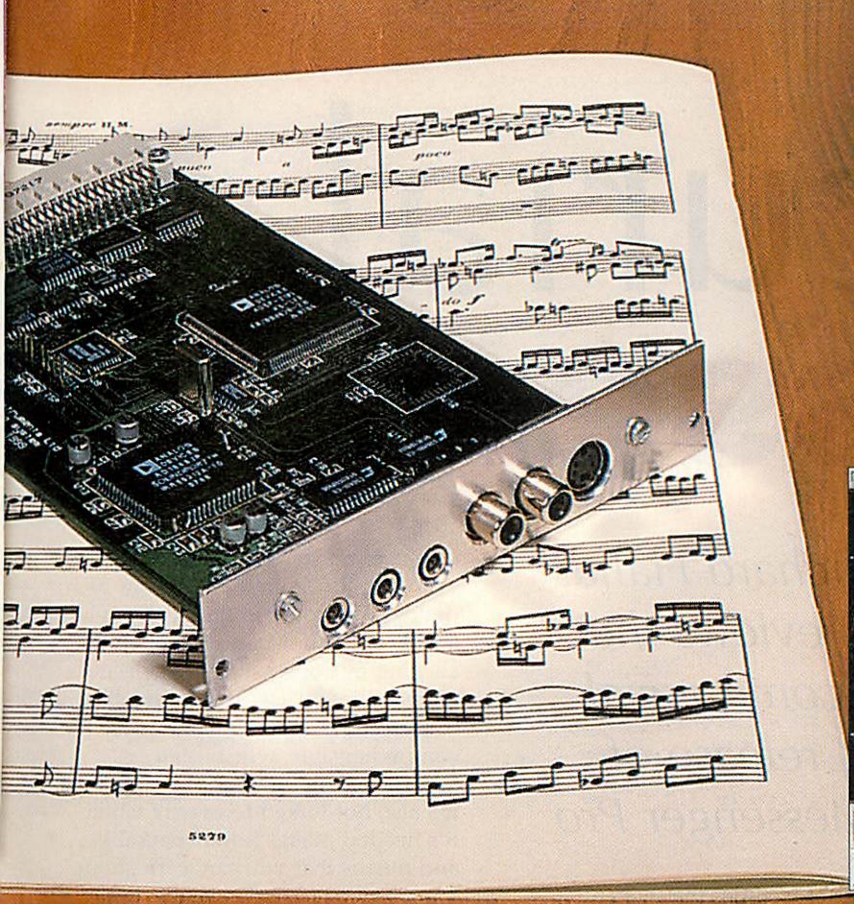


Photo: *The i16 expansion card, resting on a score of Max Reger's Phantasie und Fuge Op29 for organ. This piece, and other genres, were used in the i16 listening tests. (Photo: Trevor Attewell)*

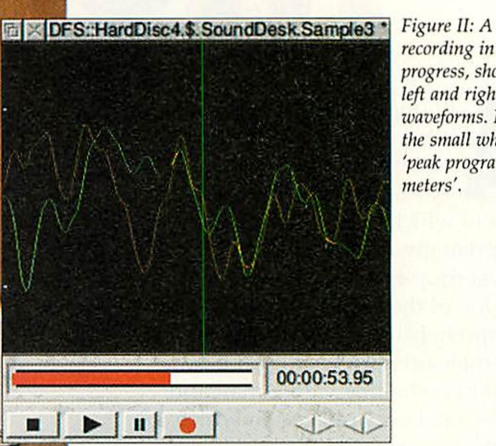


Figure II: A recording in progress, showing left and right waveforms. Note the small white 'peak program meters'.

very few youngsters can hear tones above about 18KHz.

In i16 the rate can be selected either by dragging a slider, or by selecting it from a menu. In the latter case the choice is made either by clicking on a number, or by selecting a named source, such as 'voice' or 'CD'.

It is tempting to use the highest rate for everything, but that demands about 200K of harddisc space per second, and would be wasted on speech, for example. The second window has a display similar to that of an oscilloscope, showing the incoming left and right sound waveforms. Two small indicators, on one edge of the display, follow the peak positive and negative waveform levels very rapidly, but fall back slowly. They make it easier to avoid clipped peaks, which might result in distortion.

Below the window a red bar indicates the length of a recording in progress. The precise timing is shown separately in minutes and seconds. Above and below the red bar are black lines which can be dragged to limit the recording, or the playback, to any chosen start and/or end point. There are also nudge buttons which can be used to make fine adjustments.

These timing additions appeared in the latest version 1.03, reviewed here. They make it possible to define the desired sample accurately from a longer section saved previously. Under this window are the usual controls, Stop, Play, Pause and Record.

Trevor Attewell makes some 16-bit sounds

But how's the sound?

Sound cards in a computer are subject to noise pickup, some from the mains, and a lot more from high-speed digital signals, especially in Risc PCs with StrongARM, as used for this review. i16 is built on a four-layer board, with separate analogue and digital copper screens between layers. This improves quality on unscreened cards, but cannot be a complete cure. Experimenting with the layout of external cables may also help.

Finally, for those who like to see actual measurements, the overall frequency response relative to 0dB at 1KHz was -10dB at 20Hz, -3dB at 50Hz and -1.8dB at 20KHz. Noise was better than -50dB at the standard output of 1mW into 600 ohms. END

easy

Product details

Product:	i16
Price:	£149 + VAT (£3.50 p&p)
Supplier:	Irlam Instruments Ltd, Brunel Science Park, Brunel University, Kingston Lane, Uxbridge, Middlesex, UB8 3PQ
Tel/Fax:	01895 811401
E-mail:	sales@irlam.co.uk

Mercurial messenger

Richard Hallas reviews the commercial release of Messenger Pro

Although the RISC OS platform is not exactly renowned for its widespread support of all the latest Internet standards, one area in which it has always fared surprisingly well is its e-mail and newsgroup-handling software.

One of the earliest pieces of really comprehensive and well-written Internet software for RISC OS was *Newsbase*, the freeware e-mail and news database application which for a long time formed the backbone of most users' e-mail setups.

Newsbase, though, only stored the messages themselves; in order to actually read them, you needed a newsreader application. There were a few of these, but the best was undoubtedly *Messenger*, which was one of the most professional-looking pieces of free software ever to grace the RISC OS platform.

If, like me, you are one of those people who considers *Messenger* a favourite piece of software, then prepare yourself for a new favourite, because *Messenger Pro* is finally here. And if you're not one of those people, it's about time you checked this software out.

Getting going

Let's start with the bad news. *Messenger Pro* is now a commercial product which, surprisingly enough, means that you have to pay money for it. Luckily, you get a lot for your money. What's really remarkable to my mind is that *Messenger* was ever free in the first place.

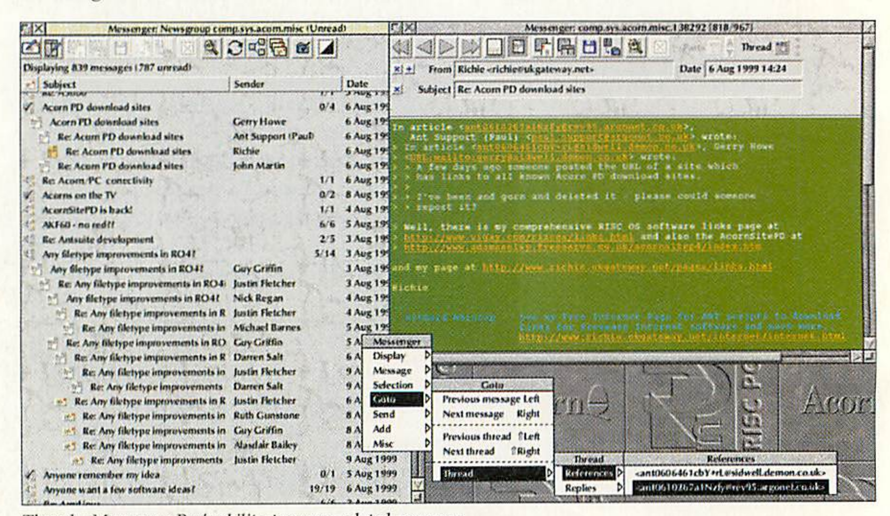
I started off by talking about *Newsbase*, and that was important because *Messenger* used to rely on it. However, one of the most significant improvements in *Messenger Pro* is that *Newsbase* is no longer needed. *Messenger Pro* can now do all the work of filtering and storing messages itself, so not only does that make for a tidier solution, but it also allows *Messenger Pro* to offer a number of facilities that weren't previously possible, such as editing queued messages directly.

On the other hand, if you're a long-term *Newsbase* user with a sprawling e-mail setup that you don't want to be forced to change, *Messenger Pro* can carry on using *Newsbase* instead of its own database system. *Messenger Pro* now comes on a single floppy disc in a standard R-Comp plastic wallet with lo-tech packaging and a brief printed guide. This explains how to install the software, and the basics of its use, but the main online documentation is provided in *StrongHelp* format and is one of *Messenger*'s great strengths.

With software as complex as *Messenger Pro*, it's not reasonable to expect to master (or indeed even use) every facility from the start, but each dialogue window in the program has a little blue information icon, and clicking this opens the appropriate page in *StrongHelp*. This online help is both comprehensive and comprehensible, which is an admirable combination. The fact that it's also hot-linked to exactly where it's needed makes it indispensable, and means that you can learn about *Messenger Pro* as you use it.

Messenger Pro works with all RISC OS Internet software packages, so it doesn't matter whether you have the *ANT Internet Suite*, *Voyager*, *Termite* or a set-up based on freeware software. Installation is a delightfully simple operation (particularly so given the inherent complexity of Internet software). You do need to read and follow the installation guide, but the process has been made about as automatic as possible.

Many users will previously have used *Newsbase*, and if a *Newsbase* set-up is present, *Messenger Pro* will allow you to use it. Moreover, if you decide that you want to use *Messenger Pro*'s own database functions instead of *Newsbase*, then it



Threads: Messenger Pro's ability to group related messages into threads, and handle them in a helpful way, is second to none

is able to import your entire collection of e-mail and news messages as part of the installation process. So, both the installation and the transition to a new system are made only minimally painful, and this ease of installation is something that counts very strongly in *Messenger Pro*'s favour.

Untangling the string

Messenger Pro is a multi-user system, and very powerful. Even if there's only one of you, having multiple e-mail identities can be useful, and clearly a multi-user system is very helpful in a classroom environment. (Educational users may also like to know that an online version of *Messenger Pro* is available at a small extra cost).

If all you want is a single e-mail address, though, you can forget that the multi-user facilities are there, as a default user is set up as part of the installation process. Regardless of whether you set up multiple users, you can also create archive groups for backing up messages of your choices, or for keeping archives of e-mails from mailing lists or whatever.

Once you're set up, it's time to open a group of messages. The presentation of *Messenger Pro*'s windows is very attractive and helpfully laid out, and the comprehensive button bars have brief online help to remind you what everything does. Icons indicate the status of messages (read, unread, deleted, for attention, replied to, attachments included), and there are many viewing and sorting options, all of which can be fully customised for each group (be it e-mail or news).

One of *Messenger Pro*'s great strengths, though, is its handling of article threads. If you're not familiar with this concept, it relates to messages on the same subject, where someone has started a discussion and other users have replied to it at different times. *Messenger Pro* handles such threading superbly. It collapses all messages relating to each subject into a single line, so that all you see initially is the name of the topic (along with the number of messages relating to it).

Double-click on the entry and it opens up to show all the messages in the thread, and each one is indented to an appropriate level so you can see at a glance which of them relate to each other. Superb. Also, when reading any message, a pop-up menu shows exactly which other references and replies relate to the current message, allowing you to navigate between them easily. This is all excellent stuff, and makes *Messenger* by far the best threaded newsreader I've ever used.

In a vaguely similar vein, the display of the messages themselves is very helpful because you can view text quoted from other messages in a variety of colours. This is excellent for distinguishing who's saying what in a heavily-quoted section of text. *Messenger Pro* also supports Jonathan Duddington's *Speak*, and can read different quoting levels in different voices. Headers, signature and URL information within messages is also shown in different colours – URLs can be launched with a single click.

Messages can be bounced, forwarded, archived off to folders, dragged out to other applications, read aloud and otherwise manipulated. The only major action which is not part of *Messenger Pro* is the actual editing process when creating or replying to messages. As with most other RISC OS newsreaders (except *Pluto*) this is left to the user's personal choice of external editor. I favour *Zap* with Darren Salt's HTML mode, but some users prefer *StrongEd*.

Once you've written a message and are ready to send it, *Messenger Pro* offers spell-checking facilities, and will also (optionally) warn you if you have broken any 'netiquette' protocols. If you want to attach files to your message, just drag them to the same window where you enter the message subject and recipients. *Messenger Pro* can handle messages in MIME and UUencoded formats.

What's the score?

One of the most innovative things about *Messenger Pro* is its concept of *scoring rules*. The idea is that messages can be given priorities according to a set of rules that you define; so, if you know that e-mails from a particular individual require a more urgent reply than e-mails from other people, you can set things up so that that person's e-mails appear first, for example.

Scoring rules can be quite complex, and can be used in combination with threaded displays (each thread receiving the total score value of the messages within it), so you could theoretically perform simple automated e-mail surveys by setting up a few scoring rules and leaving *Messenger Pro* to do the hard work. It's a fairly complex system, and not for the faint-hearted but powerful. (Daunted users can safely ignore it.)

Along similar lines, *Messenger Pro* also offers message filtering if you use its own internal database system. (*Newsbase* offers similar facilities if that's what you use). This allows messages to be killed before they're even read, or siphoned off into more appropriate archive groups. Filtering is quite powerful, but if all you want to do is send messages from a particular address to a particular archive folder, *Messenger Pro* has a built-in mailing list facility which is easier to use.

Shortcomings

Currently *Messenger Pro* has a small number of shortcomings, although none are serious. For instance, while the status icons alongside e-mail messages are very helpful, I find them quite hard to distinguish from one another; ironically, the older icons used in the pre-*Pro* version of *Messenger* were very much clearer, and it's a shame that they weren't retained. More seriously, the search

Tip for ANT users

If you want to use *Messenger Pro* with the *ANT Suite* instead of *Marcel*, you'll also want to set up your software so that *Messenger Pro* is launched when you double-click on the E-mail & News icon in the ANT front-end. It's easy to do this.

Find the *!InetSuite* application on your harddisc, and Shift+double-click it to open it up. Look inside the *Internet* directory, then inside *Files*, and find a text file called *!InetPanel*. Make a backup copy, just in case. Now load *!InetPanel* into a text editor; you'll see an entry for each of the icons in the front-end window. Simply edit the mail&news line so that it points to *Messenger Pro* rather than *Marcel*. In my version of the file, the line reads:

```
mail&new BOOT InetApps:Apps.Tools.!Messenger
```

(The BOOT bit is optional, and just means that *Messenger Pro*'s *!Boot* file is executed when the *ANT Suite* starts up.) Resave the file, quit and reload the *ANT Suite*, and you should find that you have a convenient short-cut to *Messenger Pro*.

facilities are rather basic. What happens is that you enter some search criteria and a new message group is created to contain the results.

That's fine as far as it goes, but there are two major limitations. Firstly, the found messages are aliases to the originals, and there's no way to work on the originals themselves.

While this avoids irretrievable errors, it doesn't allow you to do things like physically moving messages between folders or deleting unwanted messages. Secondly, you can only search using one criterion at a time, which is very limiting, and there's no easy way to search for outgoing e-mails to specific people, because you can't search for the recipient of a message.

Overall

So, should you buy *Messenger Pro*? If you only use freeware Internet software, the answer is a definite yes, because it's better than anything else and isn't expensive. If you use a commercial Internet suite you may feel a bit cheesed off at having to pay out again, but it's definitely worth it in terms of price and performance.

ANT users in particular are strongly advised to get *Messenger Pro*, as the bundled newsreader, *Marcel*, looks decidedly amateurish by comparison. The only people who should really hesitate are those users who have already bought Jonathan Duddington's e-mail/newsreader package, *Pluto*.

Here, a cross-grade is probably not worthwhile unless you need specific facilities that *Pluto* doesn't provide (*I'll back that up, I use Messenger Pro for work where I need multiple identities, but for personal mail I use, and prefer, Pluto – Ed*).

To my mind, there is little doubting that *Messenger Pro* is the superior of the two products: *Pluto* doesn't do "proper" thread-handling and isn't a multi-user system. Also, it doesn't offer *Messenger Pro*'s compatibility with existing *Newsbase* setups. I've been using the latest *Pro* version for several weeks, and the earlier freeware version for years before that, so I feel confident in saying that the package is solid, reliable and a delight to use.

Not only is it my favourite e-mail package for RISC OS, but it's also the best such package I've used on any computer. If I had to choose between *Messenger Pro* and, say, *Outlook Express*, I know which I'd pick (and it wouldn't be the Microsoft offering). END

Product details

Product:	Messenger Pro
Requires:	4Mb RAM (8Mb recommended); RISC OS 3.1 or later; Internet connection and appropriate software
Price:	Single user £30; Online/network version £40; Site/network licence £100;
Supplier:	R-Comp, 22 Robert Moffat, High Legh, Knutsford, Cheshire WA16 6PS
Tel:	(+44/0) 1925 755043
Fax:	(+44/0) 1925 757377
E-mail:	rcomp@rcomp.co.uk
Web:	http://www.rcomp.co.uk/

- Risc PC 700 (4 years old) 450Mb hard drive, 20Mb RAM, std. monitor, BJC4100 colour printer, Irlam colour mobile scanner, Impression, ArtWorks etc. E-mail: charlescollis@hotmail.com
- For Sale, A3010 4MB, 80MB HD, 24X CD ROM, HP 320 printer. No monitor. £200. Tel: 01925 571203 (Warrington)
- Risc PC 600, 20+2Mb RAM, 540Mb HD, AKF60, CD-ROM, ScanLight 256, speakers, lots of software including Ovation Pro, ArtWorks, Personal Accounts 4, SimCity 2000, Exodus, StarFighter 3000. £400. Tel: 01923 779141. (Watford). Andy Dickson.
- Acorn Risc PC 600 system 16Mb RAM, 1Mb VRAM, 420Mb hard drive, 16bit sound, 24xCDROM, 486sx33 PC card, two slot backplane, AKF60 colour monitor, all clean and faultless. £400 inc P&P. Tel: 0151 677 9585
- Acorn User magazines plus some discs from 1991 – any offers? 01548 843 852 (Devon)
- Acorn Master 512 computer with monitor, discs and ROMs in good working order, free to a good home. Ring 0151 355 3855 (Cheshire)
- ARM 610 processor, £35. 32Mb NEC SIMM £35; 200 HD Floppy discs pre-labelled £55; Elite £25; Starfighter 3000 £25; Tel: Christian 01285 659782
- A5000, Learning Curve software plus Advance, Multiscan monitor. All original manuals boxes etc. Excellent condition. Also dot-matrix printer. Offers. Telephone 01429 836372 or e-mail: robert@vardill.demon.co.uk
- WANTED: HyperStudio, version 3 or later. Contact Alan at alan@rileyave.freeserve.co.uk
- For sale: A5000, 40Mb HD, 4Mb RAM, monitor, BJC 600 colour printer, Scanlight hand-held scanner, 56k modem, Impression, Eureka, Pipedream, DrawWorks, games etc. Manuals, books and magazines. All in very good condition. Offers please. Tel: 0118 988 6391 (Reading)
- Artworks Clip-art 1 & 2, £25; Image Outliner £20; 1st Word Plus £10; Genesis Plus £10. Tel: Christian 01285 659782
- Risc PC 600 2-slice, 40+1MB RAM, 850MB & 1.7GB HDs, CD-ROM, RAPIDE card, 5x86 100MHz PC card, 16bit sound u/g, AKF60, speakers, parallel port zip drive, lots of software inc. PcPro3, Impression Publisher, Easy C++, Java, games. £800 ono. Tel: Damian 01225 318584 or e-mail ee6dflg@bath.ac.uk
- A3010, 14in colour monitor. Original manuals, disks and boxes. including Easiword word processor plus games. Excellent condition. £150. Phone after 5pm (Birmingham).
- Sibelius 7 music processing software. Latest version complete with manual, keystrip. Exactly the same as a brand new copy but half the price, £250 Steve (0113) 226 4912, Leeds.
- For sale: A5000 with 40Mb HD, 14in Acorn monitor + original software, Impression Style & Lemmings 1 & 2. Hewlett Packard Deskjet 500 mono printer. The lot for £100 + postage. Contact ianstuart@tesco.net
- Acorn A410, 4Mb RAM, colour monitor, 210Mb IDE HD, external CDROM, Publisher, Speak etc. Good condition with manuals + BJ10ex printer. £100 E-mail: mark@kruspe.in2home.co.uk (Carlisle)
- Holed Out Compendium, E-Type Compendium, E-Type 2, Black Angel, Virtual Golf, £15 each. Compendium: ARCticulate speech, Cyber Chess, Apocalypse, Aldebaran £20. Tel: Christian 01285 659782
- FREE to anyone who will collect. Old computers with monitors, discs, software, books: BBC Master, Texas 99, Sanyo, RM Nimbus. 01455 552250 (Leics, M1 junction 20) Foster.
- A5000 2Mb RAM, 80Mb HD, monitor, Citizen Swift 200 colour DM printer: £200 ex-carriage. Will deliver free within 100 miles of Lancaster. Tel: 01524 34600 (Lancaster) Robin, after 7:00pm
- BBC Master, manuals, monitor. Single & double density disc drives, joystick, boxed games. Mini Office II and manuals, ViewSpell, OverView. Assorted games, educational discs, Beebug mags, blank discs. Reasonable offers accepted.
- A5000 kit incl 14in monitor, 80Mb+350Mb HD. All manuals, some software, clip-art and freebies. Exc cond. £250 ono. May deliver. Tel 01296 426684 (Aylesbury).
- A7000, 8Mb RAM 515Mb HD & CD-ROM drive. AKF65 monitor, keyboard and mouse, plus software: £250. Tel: 01553 675339, after 7:00pm

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Your name:...Telephone no:...

Anthem

Gareth Moore sings with a new voice

Of the new RISC OS machines set to launch this year, two of them, the RiscStation and the Mico, come complete with something new to our community; MIDI ports, placing the easy connection of thousands of different musical instruments just a single cable away.

MIDI was originally designed as an easy way to connect electronic musical instruments to one another, and over the past 18 years it has established itself as a genuine global standard. MIDI can also be used to hook instruments up to computers, allowing easy recording, editing and playback of music – collectively called 'sequencing'. This needs not only suitable hardware but software too, and *Anthem* is the latest RISC OS application to do just that.

MIDI is innately fiddly, which means it can be confusing to work with directly. For one thing it can only cope with the concept of 16 different instruments at once, assigning each to a separate 'channel'. If you want literally simultaneous control of more than 16 different instruments you need more than one MIDI connection, but usually it makes more sense to share each channel among multiple instruments, swapping the currently active sound as and when you need to.

Nowadays it's usual for all instrument sounds to be provided by just one actual MIDI synthesiser, although there's no need for this to be the case. You can do all sorts of clever things via MIDI, and a good MIDI sequencer will give you access to this power while protecting you from the technical realities as much as possible.

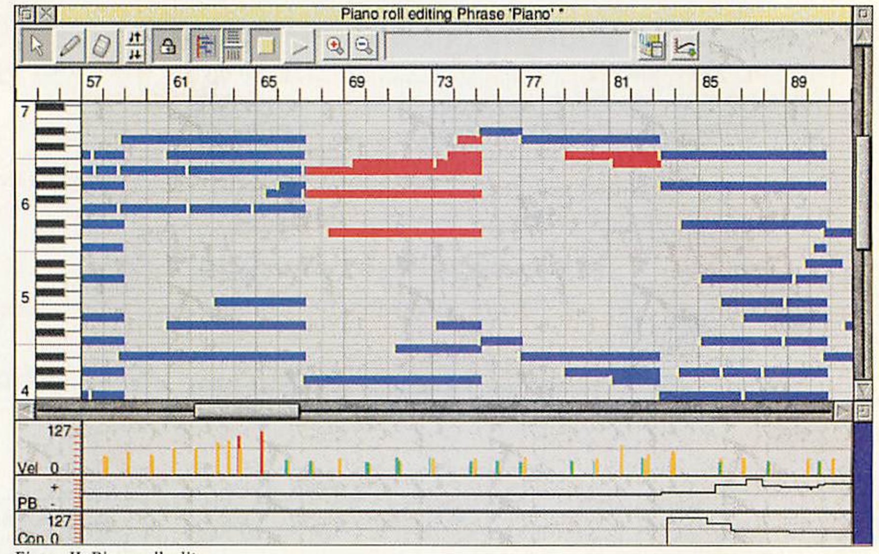


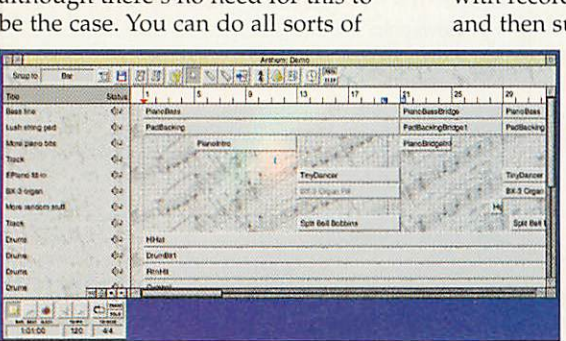
Figure II: Piano roll editor

Ultimately, MIDI is just a sequence of commands. The success or failure of a MIDI sequencer rides solely on how easy it makes it to edit all these commands.

Making music

Creating a piece of music can be as simple as making a live recording from a MIDI instrument, or as complex as slowly building one up from various elements entered directly at the computer keyboard. Usually it's somewhere inbetween, with recordings edited and arranged and then supplemented with computer-entered drum tracks, bass lines or whatever is required.

A good MIDI sequencer should therefore make it as easy as possible to both record and edit music. Like printed words, MIDI sequencers tend to display music written from left to right, almost always via a horizontally scrolling timeline of music which is usually split into a number of tracks.


Figure I: Main arrangement window

Each track in a sequencer can have MIDI music placed on it and all tracks are played simultaneously to build up a piece. Earlier MIDI sequencers (such as Clares' *Serenade*) force you to have precisely 16 tracks, each of which corresponds to one of the 16 MIDI channels.

Other sequencers allow more than one track per channel, but better still is to take a further step back from this and use tracks as blank lines on a sketchpad, instead making musical phrases; the self-contained, fundamental elements of the arrangement.

Instead of having tracks with individual notes on we place phrases instead, making it much easier to edit and arrange a piece of music. It's this last and most powerful approach which *Anthem* opts for.

Music almost always contains repeated elements, whether it's an obvious verse/chorus structure or a subtle recurrence of a theme, and so a good musical editor allows music to be stored in a way that is easily reusable. While it's all well and good to cut and paste and then modify a

Figure III: Stave roll editor

section, it would be really nice if we could use the same phrase (a bass line, say) multiple times and have just one master copy which would change all the other instances if modified.

Anthem lets us do this incredibly easily through a part and phrase hierarchy. In *Anthem* each musical 'phrase' is in turn assigned to a 'part', and it is the part which is placed on the timeline – each phrase is used in one or more parts.

The part adds extra commands to its underlying phrase, perhaps instructing it to repeat a number of times or change the MIDI channel. A repeating bass line only needs to have its main theme entered once since it can be placed repeatedly in different keys, all simultaneously editable.

Parts can also assign an instrument (selectable from any bank), volume, stereo pan, reverb and more – you can even choose the quantisation level per part, allowing you to set how much the phrase is forced onto the beat. You can also choose to play just a particular section of a phrase if you wish.

Next up in the *Anthem* hierarchy are the actual tracks you place parts on, which in turn can overrule both parts and their underlying phrases by forcing the same channel, instrument and MIDI control settings. You're unlikely to want to simultaneously set controls at all three levels of phrase, part and track, but in *Anthem* you are given the freedom to choose the method which you find easiest.

You can also mix and match methods within a piece, using some tracks for single instruments while reserving others for a variety of contents. It's incredibly flexible – and, importantly, intuitive.



Using Anthem

The main window in *Anthem* (Figure I) shows the various parts placed on the tracks, and offers multiple routes to the editing windows. *Anthem* has five basic editing modes, and it's no surprise that these include the standard piano roll editor (Figure II). This is a scrolling window with time along the horizontal axis and pitch along the vertical one – horizontal bars represent notes of varying pitch and duration.

You can drag notes around and adjust their length, as you'd expect, and create and delete them. A vertical piano keyboard is shown to help identify notes, although there is also a live monitor box showing details about the current pointer position. Any number of resizable graphs can be attached to the bottom in order to edit extra parameters such as pitch bend and note velocity (which you can also edit by double-clicking a note and using the sliders that appear).

You just draw on the graphs to alter the values, or touch the scale to zoom in or out. It's all so wonderfully easy – powerful and very configurable without adding any unwanted complexity. You can also thin out certain events automatically if they're too dense (moving a pitch bend wheel can generate a lot of data).

You can switch to a stave roll editor (Figure III), which is a sort of halfway house between traditional music notation à la *Sibelius* (which *Anthem* does not directly support, although you can import and export to and from *Sibelius* via standard MIDI files) in which the piano roll is still used but now horizontal stave lines are drawn at the appropriate pitch, along with treble and bass clefs (no other clefs are supported). Ledger lines are added as appropriate.

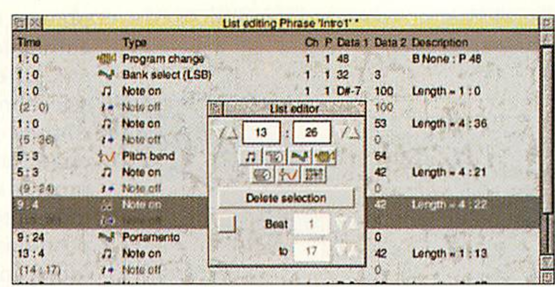


Figure V: Event list editor

I actually found it a bit confusing initially because of the non-standard spacings (even though I can read music without trouble), but if you're transcribing manuscript music by hand it could make things very much easier once you get used to it. Along similar lines there is also a drum editor (Figure IV). In this mode the keyboard or staves are replaced with a list of percussion instrument names, indicating which drum is linked to a particular pitch by your MIDI instrument.

If you like looking at the raw MIDI data or if you have ever seen a music tracker editor you'll be at home with the list editor mode (Figure V). In this view each event in the phrase is listed by itself on a separate line, with all the data associated with that event displayed in adjacent columns. Note on and off events are grouped into pairs for ease of editing, but the real power of this mode is to add in non-note MIDI commands.

You can add quite literally anything here that your synthesiser supports – or at least you can long as it does not require a System Exclusive message, which *Anthem* does not currently support. In practice this is not a problem, however, since unless you're doing something very advanced with a suitably powerful synthesiser you're not likely to require it – and if you ever do you could always send the

Figure IV: Drum roll editor

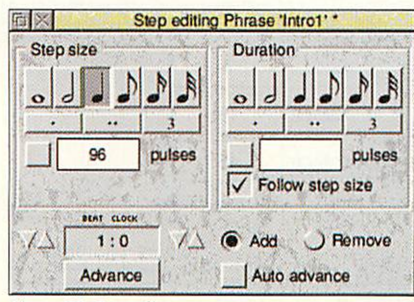


Figure VI: Step editor

Power quantise
Quantise pattern length 4 : 0
By 100%
Window 100%
Snap towards
Nearest point
Backwards to previous point
Forwards to next point
Humanize by 0 pulses
Only selected events
Only note events
Spread continuous controllers
Note lengths
Quantise: Length Off time
By 100%
Humanize by 0 pulses
Cancel Quantise

Figure VII: Power quantisation

necessary configuration settings from a separate application, such as *ArmEdXG*. If you don't know that you need SysEx then you almost certainly don't.

Anthem is particularly intelligent in knowing about various MIDI events, using descriptive text as well as command numbers wherever possible, and you can easily drop in new events by clicking on one of the options in the associated tool panel.

It's not until you try to edit an existing event, however, that you realise quite how clever *Anthem* is – instead of forcing you to fiddle with raw values *Anthem* instead pops up a context-sensitive window which lets you edit the value via an intelligible list of options, or to adjust magnitudes with a slider if you wish. Not only this, but different event types have different icons, making it easier to read the display. If only all sequencers were this user-friendly!

The final editing mode is the step edit mode (Figure VI), which lets you add to an existing phrase or create a new one by playing an instrument – but not in real time. You can also use this mode to remove the notes that you play if you wish.

As well as manual editing of phrases you can also apply automated procedures from an impressively large selection, including what *Anthem* calls 'power quantisation' (Figure VII), a process whereby notes are moved to nearby note positions so as to correct minor imperfections in a performance or to add a particular feel to a piece.

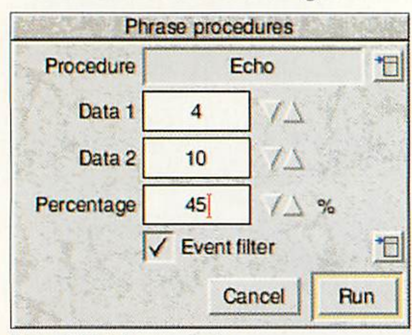


Figure VIII: Phrase processing

The options, which include a clickable quantise point display (like a ruler in a desktop publisher) cover virtually everything you could ever want to do. Other options include adding echo (Figure VIII), legato and humanisation effects, and all procedures can use event filters to decide just what they are applied to.

Recording

So what about actually getting some music into the phrases to edit in the first place? You could just keep clicking away in one of the editors, but the most obvious method is to record a live performance from a MIDI instrument such as a keyboard.

Anthem provides the usual niceties such as an optional metronome and the ability to hear any existing tracks at the same time, and, as you would hope, its recording is very accurate. Recording really is exceptionally easy – just hit the record button and you can play for as long as you like (there's no need to set an end point if you don't want to).

Once you're finished just hit stop and choose where to store it. You can also record over existing phrases if you want, either replacing or preserving existing data. And if you're not much of a performer you can use *Anthem*'s step recording mode to enter notes at your own pace. *Anthem* also offers intelligent options such as the ability to combine sustain pedal and note events to produce a clearer, more intelligible score.

MIDI files are a standard music file format, and *Anthem* does a very good job of loading them – it's surprisingly fast and it can even analyse them and split them up into phrases and parts. Very clever! You can also drag an existing *Anthem* saved song file into a phrase list window and all the phrases from that song are added into the pool for the current piece – the ultimate example of powerful drag-and-drop!

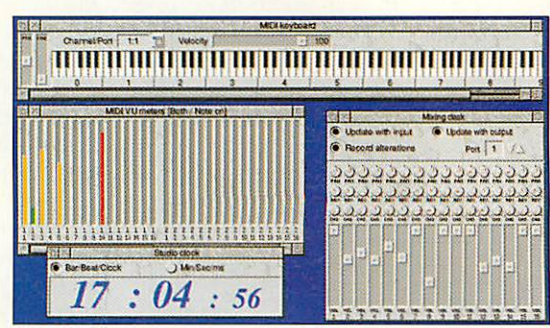


Figure IX: Studio gadgets

Anthem's main window features not only the track display and gadgets to move parts around, but also an associated set of icon shortcuts and a transport toolbox which controls playback. All the usual stop, play and wind buttons are present, along with repeat, solo and synchronisation options.

The toolbox can be detached if you wish, and the main and piano roll windows intelligently follow playback with a cursor or by scrolling. You can also set repeat points and flags, or use some of the various gadgets available, including VU meter monitors, a studio clock display and an on-screen keyboard (Figure IX).

Best of all, though, is a comprehensive mixing desk which can not only be used to dynamically alter settings during playback but can also be used to record those live changes, making fiddly final song settings a dream to configure.

Special tracks

Anthem divides time into bars, beats and pulses. You can add a special time signature track to your song which lets you change time signature as often as you like, but because phrases are not themselves attached to a particular point in time this won't affect any phrase editor display – in fact the only thing it really affects is the metronome. You

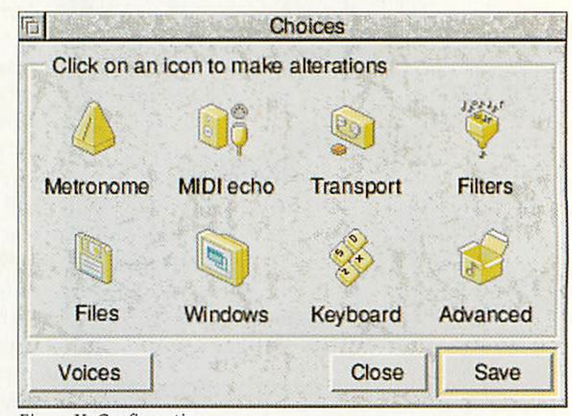


Figure X: Configuration

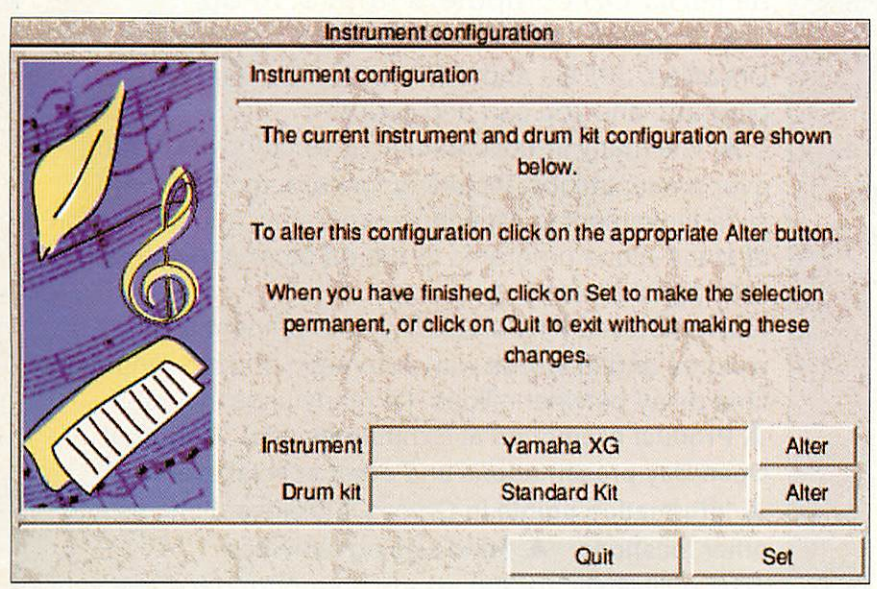


Figure XI: Setting up instruments

can also add a master tempo track, governing the playback speed of the song. The tempo can change as often as you like, or you can disable the track and use a global setting. However, you can't specify gradual speed changes other than by entering each individual tempo separately.

There is one other special track which provides one of *Anthem*'s crowning glories. It is an audio track. You can drag samples here and they will become special audio phrases and parts, and you don't even have to make sure that samples are recorded at the same rate as *Anthem* corrects for this automatically.

Using this facility you can add in a vocal line or drop in a looped bass sample or whatever it is you require. You are limited to just one audio track but even so this is a really great feature. *Anthem* stores a link to the audio file on disc so file space isn't wasted, and different segments of the same sample can be used within a song in the same way that different segments of a MIDI phrase can be used by different parts.

Be warned, however, that it gives a big speed hit, so if you have a complex MIDI track then you may need a StrongARM to be able to play back a CD-quality sample at the same time. 22KHz mono samples seem to work fine on an ARM710, however. If you're using samples of tuned instruments – and you tell *Anthem* the pitch of the original recording – you can choose the playback note for each part that uses the phrase.

Sugar on top

Anthem has plenty of configuration setup options (Figure X), including provision of a wide range of instrument definition files (Figure XI), although some of the relatively minor options annoyingly aren't saved by the 'save' button.

Anthem supports up to four separate MIDI ports (physical connections) but unfortunately it currently only lets you choose one instrument definition file to apply to all ports, which is a bit limiting if you have a lot of MIDI hardware. The author has indicated that he will be improving this soon.

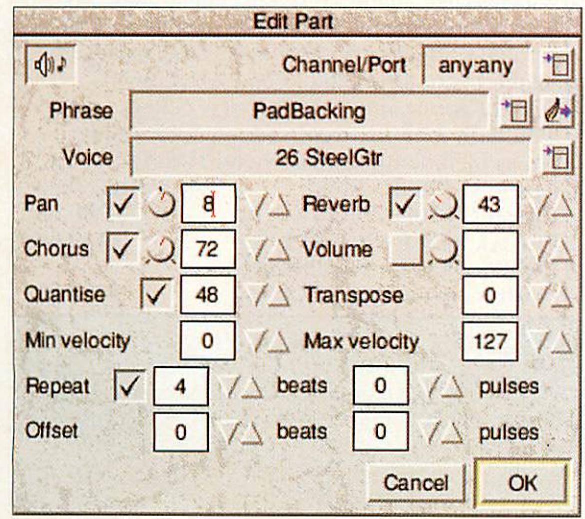


Figure XII: Editing part settings

During the time I spent reviewing *Anthem* various updates have appeared, adding new features I requested. As a result I now have very few criticisms of the package since virtually all of the complaints I had have been fixed! This bodes exceptionally well for any future purchasers of the software, and although there are inevitably still some bugs remaining they rarely get in the way.

From its attractive, modern imagery through to its intuitive interface *Anthem* is consistently well-designed. It is so intuitive, in fact, that you really can get by without needing to read the supplied ring-bound manual. At 120 pages it may look intimidating, but it isn't – it is one of the best-written manuals I have ever encountered, and its length is simply a result of the surprisingly large number of features packed into *Anthem*. It's well worth browsing through because wherever you look you are almost guaranteed to find some new shortcut or quicker way of working.

Anthem also supports interactive help, so if you don't mind waving your mouse pointer around then you can pick up a lot using this method, too. MIDI sequencers can often have nasty learning curves, but *Anthem* is a model of good design and a shining example of how RISC OS can provide a wonderfully intuitive experience.

Many of the more esoteric and rarely-used options are almost hidden away, and yet they are found without effort when you actually want them. Each time I use *Anthem* I seem to discover a new set of features that I'd previously missed simply through not having looked for them.

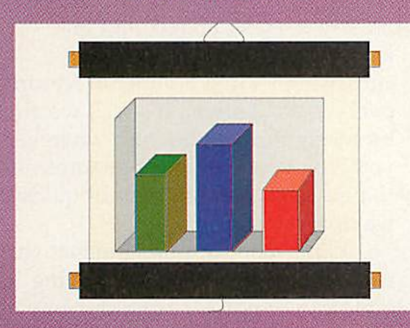
Anthem is a triumph. Five years of development have resulted in a stunningly good product. There is a danger that to enthuse about something too much will engender a degree of suspicion, but *Anthem* really is that good. At £70 (including VAT) it is extremely low priced for a product of its capabilities. If you do any work with MIDI music you really owe it to yourself to give it a go – in fact at that price I'd suggest that it makes sense to buy it even if you already own a different MIDI sequencer! **END**

Product details

Product:	Anthem
Price:	£70 inc. VAT. Overseas customers must add £5 delivery. Site licence £170 inc. VAT.
Supplier:	R-Comp Interactive, 22 Robert Moffat, High Legh, Knutsford, Cheshire, WA16 6PS
Tel:	01925 755043
Fax:	01925 757377
E-mail:	rci@rcomp.co.uk

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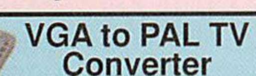
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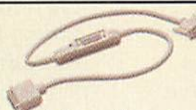
Pineapples Virus Protection Scheme has been running for over six years and is still being updated with new viruses on a regular basis. New software versions are sent out to members every four months and the total number of viruses which can be removed is well over 200. The latest version is now scanning at up to four times faster than previous versions despite coping with many more viruses.

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Studio24Pro

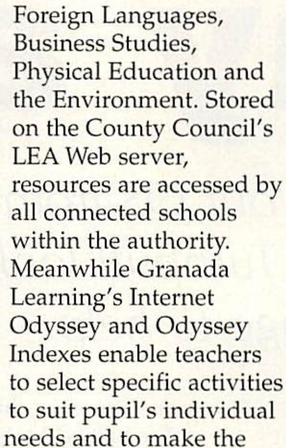
'Many Acorn User front covers have been created from scratch using this program alone, concrete proof of the power of this creative tool' - *Acorn User Mar96*

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Intranet resourcing

Hertfordshire County Council has launched Hertfordshire Learning Grid a network offering educational resources for students and teachers including a range of popular education CD-ROMs. This is one of the largest educational intranets so far to be linked to the government's National Grid for Learning.

One of Hertfordshire's content suppliers is Granada Learning who have put together an *Intranet Content* solution available to any LEA. The Hertfordshire solution consists of 34 CD-ROMs covering Science, Geography, History, Religion Education, Personal and Social Education, Modern Foreign Languages, Business Studies, Physical Education and the Environment. Stored on the County Council's LEA Web server, resources are accessed by all connected schools within the authority. Meanwhile Granada Learning's Internet Odyssey and Odyssey Indexes enable teachers to select specific activities to suit pupil's individual needs and to make the most of the resources on the Internet.



Eye catchers

Struggling with your ICT planning? Then take a look at Project Presenter from SEMERC (0161-827 2927). Designed for Key Stage 2 and above, this meets all the requirements of Unit 6A (Multimedia Presentation) in the Qualifications and Curriculum Authority's ICT Framework Document.

Make as simple to use as possible all you have to do is drag and drop pictures, video clips and sound files into the file window and choose the length of time you want each to be displayed. You can make the presentation more professional by selecting a transition between images from a dissolving screen to raindrops.

Now all you have to do is move forwards and backwards through the presentation by clicking on the on-screen arrows. Simple. If needed a switch can be used instead of a mouse and there is a closed-loop continuous presentation option available too.

The QCA document recommends that children should use a program to organise, refine and present information in different forms while being sensitive to their audience. SEMERC assures us that Project Presenter does just that while ensuring that students are aware of the relevant technical vocabulary and the key idea that software can include a range of media. Prices start at £29 for a single-user version.

A case in point

The Headteacher at Sutton-on-Sea County Primary school, Chris Flanagan, is waving the flags for ArgoSphere since he has been successfully using the service in school for over a year: "At the time (and still) the interactivity of the site stood it apart from the rather static and dull examples of many education sites."

What impressed him was that teachers can download activities locally to run on the school Intranet, ensuring that the environment in which the children learn is safe and secure. Downloading also helps save money and allows teachers to adapt activities for different lessons. However, his personal favourite is Test Maker which lets you create tests on whatever subject you want.

"For now the Internet is rather like a large stone – it is only just beginning to roll and the National Grid for learning has been the lever which has overcome its mass to get in rolling into schools. Sites such as ArgoSphere reveal something of the real potential of the Internet." You can access ArgoSphere for yourself on www.argosphere.net

In brief

Making learning fun

Education Minister Charles Clarke and TV personality Loyd Grossman have been lending their support to a campaign bringing American-style children's museums to the UK.

The Kids' Clubs Network, the national charity for school age childcare, has launched a project aimed at encouraging museums in Britain to develop fun, interactive exhibits teaching children about science, technology and the arts. Loyd Grossman is chairman of the Campaign for Museums, and Mr Clarke launched the project with a visit to the *Museum of Me*, in Bargehouse Street, on London's South Bank. Other museums are coming on board too with the Children's Discovery Centre in Stratford, Lewisham's Horniman Museum, Quarry Bank in Dudley, Thetford Partnership in Norfolk, Royal Cornwall Museum, Truro and the Sheffield Children's Centre already signed up.

Morale and standards

Most people believe the status of teaching as a profession has fallen in recent years, according to recent opinion poll conducted by Gallup for The Daily Telegraph. It reported that 70 per cent of adults felt teachers had a lower status than when they were at school while only 21 per cent believed teaching now had a better reputation.

In addition 69 per cent thought the Government had "not made much difference". One in five believed Labour had succeeded in delivering higher educational standards while 6 per cent believed standards had fallen. Views were mixed about long-term standards with 45 per cent of seeing the standard of education in schools today as "better", while 47 per cent believed that standards had declined.

Almost half of the people surveyed by Gallup felt children now did more homework than they themselves had, compared with 36 per cent who believed today's children did less homework.

Diary date

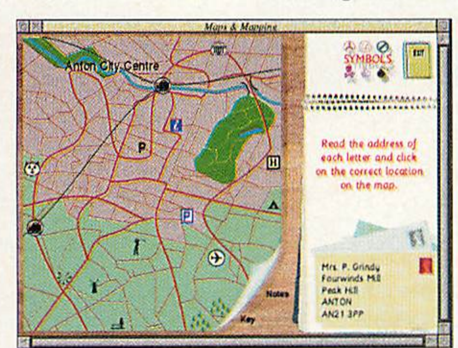
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Find your way around

Don't know your OS from your contour? Pam Turnbull looks at a package to help

Created to support and extend the BBC Schools TV series, *Zig Zag: Village, Town and City* stands very well on its own. Its manual is very nicely set out allowing you to cherry-pick activities to practise the skills of making maps and plans, using symbols, giving directions, as well as using co-ordinates and grid references. Alternatively, you can explore a Village, Town or City and discover the same range of activities but related to a different environment and to different levels of complexity.

You are advised to start with the *Village* and here (as in the town and city) you'll find four locations to visit. Choose the school, for instance, and there are three activities: take a child from the hall to Class 1 and then the playground using a plan map, match an aerial view of the classroom to a plan and finally design your own classroom. The latter two activities were very popular, though not as easy as children initially thought.



Items have to be moved and rotated using the Turn button and it led to some good ideas for work off the computer. In addition when they are designing their own classroom (nice small class sizes too) there is an *Ask your teacher button*, this allows a teacher to view their proposed layout and make suggestions or print off the screen before the children move on.

The Village Bus Stop asks you to match symbols with buildings you can see in the picture of the village. This is further developed in the Town Supermarket and the City Tourist Office activities. Staying in the Village for a while, the Pond offers you fun and games with a Duck or a Frog. Both introduce the concept of the four compass points as you guide the creatures around the pond. Again this is developed further in the Town Church and City Railway Station activities.

Final stop in the village is at the Farm and here children work on three activities reading co-ordinates, reading letter/number co-ordinates and writing co-ordinates. This is all very straightforward though the tractor activity becomes tedious very quickly. My only niggle is that you enter co-ordinates throughout the program by choosing a letter and digit from a list, which in itself is fine. However, having decided on A 2 as your first point, you'll have to re-enter both elements even if your next point is A 3. Just change the 3 and nothing happens, there is no error message or friendly advice and the program doesn't clear the boxes to encourage you to enter elements afresh each time. Children (and adults) found this very frustrating. The graphics are very attractive and though sound is minimal and all instructions are written rather than spoken it is a very easy program to use. You will need to plan carefully which activities to use as some require more additional information and work than others. In particular, the Town Supermarket where you plan the ideal car park layout. This works best as a follow-up activity having analysed and discussed parking patterns and needs.

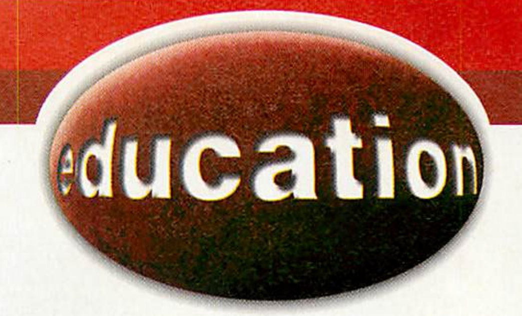
A range of attainment levels are addressed and some activities are quite challenging. From the basic N S E W instructions at the Village Pond, the Town Church requires children to use the four compass points to find places in relation to one fixed point.

This then leads to a second activity where they have to find places from a variety of different points on the plan. This can be quite difficult, for instance, *north of the church* may not be at the top of the map. This is taken further at the Railway Station in the city where the eight points of the compass are used to find the route a train must take around Britain.

A lot of thought has gone into this package providing everyday problems children can relate to, plus a range of maps and plans. The manual too comes with suggestions of the type of questions children and teachers should be asking, as well as extension ideas for the activities on the computer or whole-class discussion. Some excellent ideas, well executed. **END**

Product details

Product:	Zig Zag Maps and Mapping
Ages:	7-11
Price:	£34
Supplier:	Logotron, 124 Cambridge Science Park, Milton Road, Cambridge CB4 0ZS
Tel:	(+44/0) 1223 425558
Fax:	(+44/0) 1223 425349
E-mail:	info@logo.com
Web:	www.logo.com



Times are a-changing

Pam Turnbull surveys a new package to make sure your Tudor and medieval knowledge is up to scratch

This CD-ROM contains a range of original documents, photographs of artefacts, maps, illustrations and video clips from the Hampshire County Council archive. In this product they have created two separate programs using their archive material pertaining to the medieval and Tudor periods. In addition there is a manual and online guide to the work of the Hampshire Record Office and how and why archives and conservation work is undertaken.

The applications have been written using *Textease* with all links spoken when clicked. The *Textease Browser* (you don't have to have a copy of *Textease* to access these programs) allows you to alter the scale, save and print pages as well as keeping track of the pages you've accessed so far. Certain pages will advise you to alter the scale – using the eye or magnifying glass icons – to zoom into certain images to get a closer look at the wood carvings or how the roof has been designed.

Starting with Medieval Hampshire I found four chapters to choose from: Medieval Towns, People, Religion or Manors.

The Medieval Town section itself is sub-divided into two further chapters, *How were towns defended?* and *What was life in medieval towns like?* Using original drawings and photographs of artefacts, additional information is given in the text, or you are asked to access the labels on a drawing to see more detailed sketches and find more information, such as what the place looks like now. The alternative chapter on town life is divided further into sections on *Domesday and Town Charters*, and *Shops, Trade and Industry*. The former provides information on what Domesday and town charters were using images of original documents and even a list of the Domesday questions asked of the populace.

If you are interested in manorial life there are sections on the lords and the bishops using the original documents (with translations) to describe and explain what was happening in 14th and 15th century Hampshire. Although these all relate to one specific county, the parallels are clear with the rest of the country and should inspire you to access information from your local county record office. *Textease* has been used well and I particularly liked the video clips of early twentieth century farming methods and their comparison to medieval farming.

For more detail on everyday life, the chapter on medieval people looks at households using the surviving wills and inventories from the time as well as the place of women in society. Then there are further chapters on religion and in particular monasteries, abbeys and parish churches.

Tudor Hampshire follows the same design, but here chapter headings are: Three Tudor monarchs, Two Tudor Men, Three Tudor Houses and Three Tudor Towns. In particular, this program concentrates on the reigns of Henry VIII, Mary I, and Elizabeth I. There is some general information but this is not an in depth study of the Tudors but rather concentrates on their relationship with Hampshire.

Henry was very fond of Portsmouth due to the naval connection, but the section also covers Henry and the dissolution of the monasteries. There is also a nice case study of Bramley Church and how it has changed and survived through the ages.

Everyday inhabitants of the area are not covered, as documents only usually survive concerning the rich and famous. Two of these are John White and his mentor Thomas Wriothesley.

Both families profited during the Tudor period and while the Whites did well from the dissolution of the monasteries, Wriothesleys spent time in the Tower of London for their Catholic beliefs.

The three properties covered are Elvetham Hall, Bramshill and The Vyne. Using original letters and accounts you can tell just how expensive entertaining royalty was. The program is also more helpful with its advice telling you to increase the view of the Bramshill four-poster to 200% for a better view of the carvings.

The three towns covered are understandably Portsmouth, Southampton and Winchester. Using a range of maps, hotspots have been added to make these maps and plans interactive. These can then be explored and compared to see who our major trading partners were and what has survived through the intervening years.

This is a unusual but useful resource and if you want more information HRO have resource packs entitled *Medieval Realms* and *Life in Tudor Times* which complement the resources on the CD-ROM and cost £15 each. **END**

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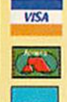
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Drums along the mersey

Mike Cook beats it out

Following on from last month's look at an eight channel A/D (Analogue to Digital converter) let's see what we can do with it. For starters here's how to make a MIDI drum kit. Those of you with very long memories will no doubt recall the December 86 issue of *The Micro User* where I described a simple drum kit. This was simple because it only sensed if a drum was hit and this was used to make a sound from the sound chip in the Model B.

Nowadays a MIDI system will give a much better quality of sound, not only that but the thing with MIDI is that as well as signalling a drum has been hit it also has to be told how hard it's been hit. This changes not only the volume of the sound but also the nature of the sound itself. For example, a cymbal makes a different sound if gently tapped as against being given a hefty thwack, it's not just louder. This means that any electronic drum kit circuit has to not only detect a hit but also measure the size of it.

First we need a transducer that produces an output, proportional to how hard it is hit. Next we need a circuit that monitors the signal from each transducer and sends the appropriate MIDI command whenever it detects a voltage peak. This means that the A/D converter has to be continuously driven, a simple but time-consuming task. That's why it is best to use a micro controller, however unlike our standard PIC circuit this only requires a MIDI output, see Figure I. As you will see there is just a single bit output used to generate the MIDI signal through a PNP transistor.

The A/D converter uses four of the controllers I/O pins leaving lots of free lines. I have used two of these to allow you to change the MIDI mapping – which drum pad produces which noise. With two switches you get a total of four different mappings, if you add another two switches to pins 12 & 13 you can get sixteen different mappings, enough for anybody I think.

There is no need to use pull-up resistors here as the internal pull-up resistors are enabled in the software. As we saw last month the multiplex inputs of the A/D in the single-ended mode are not altogether straightforward, therefore I have renumbered the drum pad inputs to reflect the channel number that will be generated.

As in my earlier design I have used some piezo-electric transducers which are available very cheaply from Maplins. In fact they have various different sizes of transducers but the smallest and cheapest work as well as any of them. They can cost as little as 20p in a sale and are normally less than 40p each. Looking at the output of these on a storage oscilloscope shows that you can get voltage peaks of around 20V from just a simple tap with a finger.

Fortunately the input stages of the A/D converter are clamped with diodes to the power rails, so no damage will occur if an over or under voltage is fed in. The signal goes both positive and negative and surprisingly enough you get a bigger positive signal from the black wire of the sensor.

While you can feed the sensors directly into the A/D you get better results with the circuit shown in Figure II, note you need eight of these. Basically what it does is to take the piezo-electric pulse, rectify

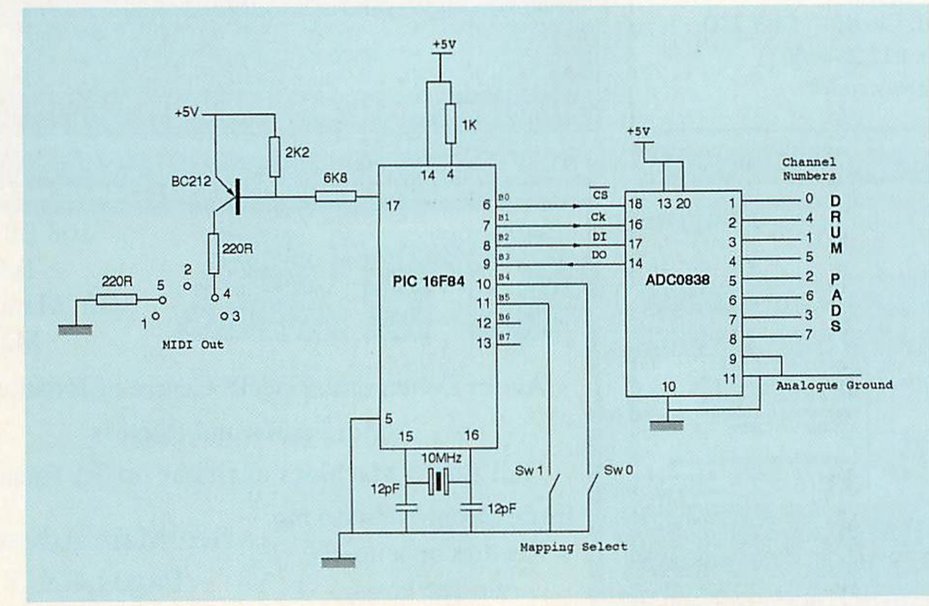


Figure I: The MIDI Drum Kit

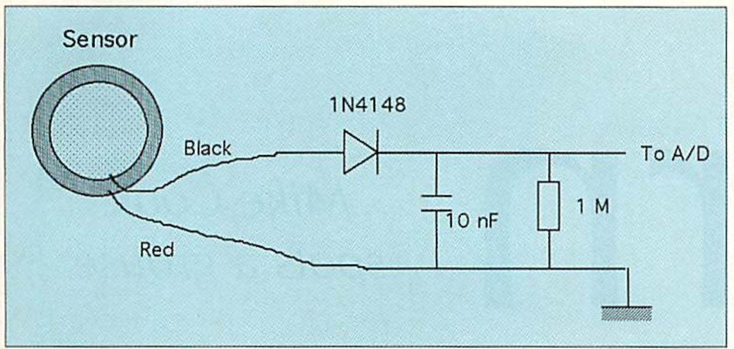


Figure 2: The sensor circuit

it and by using a capacitor holds the voltage long enough for it to be measured.

The resistor ensures that the voltage decays, ready for the next hit. You might want to alter these values to get the best out of your system. This is because the exact mechanical arrangement will alter the voltage shapes. You should increase the resistor value for a longer hold time and reduce it for a shorter one.

While you can hit the transducers directly, it is generally too sensitive if you do. Therefore, you need some sort of sandwich arrangement like that in Figure III. Mount the transducer on a solid base of wood with a little glue, then fix a pad of rubber over the top. It is best to mount each transducer separately to prevent the hitting of one pad triggering an other. Music shops sell drummer's practice pads that could be easily converted.

Now on to the software, which is not quite as straightforward as you might think or, perhaps, hope. The basic idea is that the voltage from each sensor is measured in turn, and compared against a threshold value held in memory. If the new input is bigger by at least three units than last time it was measured we know something is happening on that input.

The software then branches to the Play routine which continues to read that one input until it reaches a peak or starts to fall. At that point we know the pulse has reached it's maximum extent and the A/D reading is now proportional to how hard the pad has been hit. Now we have all the information to send to the MIDI system so we send three bytes off.

The first byte is the combined message *note on* and *Channel 10*. On a MIDI system any note sent on channel 10 is treated as a drum, so we have no need to send any sound defining message. This byte works out to be a hex value of 99, note for channel 10 (decimal) the channel bit pattern is 1001 and not the 1010 you might expect, this is because musicians can't cope with the concept of channel zero so every number is out by one.

The second byte is the number that indicates the pitch of the note to play or, in the case of drums, the drum sound. This depends first of all on what sensor is hit and secondly on what the mapping switches are set at. The mapping switch inputs are shifted one place to the right to give a number that increases in steps of eight.

If you are adding extra mapping switches you will need to change the value that is used in the AND instruction to 38h for three switches or 78h for four switches. The mapping switches number is added to the channel number and a look-up table routine is used to return the resulting drum sound number. This look-up table routine is called *map* and is placed at the end of the code and is very easily changed to any mapping you require.

The final number sent to the MIDI system is the velocity or A/D measurement. This is only a seven bit value in the MIDI system and so our eight bit reading is converted into the required range by shifting it one place to the right. Note in the case of MIDI drums you never need to send a MIDI *note off* command as you do with other instruments.

Well that's it for the simple system but what about enlarging it. The most obvious one is to add another A/D converter to allow sixteen drum pad inputs. You can do this by paralleling up all the input signals to the converter (pins 16 to 18), and feeding the output (pin 14) to one of the spar PIC controls. You will also, of course, need to modify the software to read the two serial bytes at once.

You can get commercial MIDI drum kits but they will set you back at least £1000 so there is an opportunity of saving yourself some money. The other great advantage is that you can practice drumming with headphones on giving innocent passers-by the minimum of inconvenience. **END**

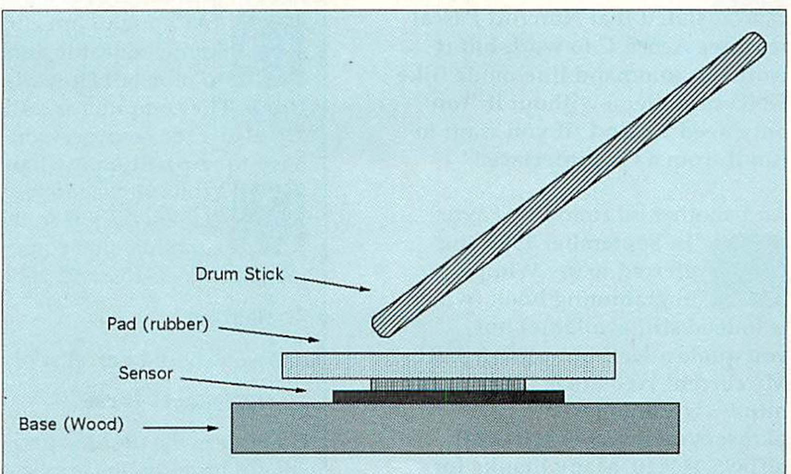


Figure 3: The sensor sandwich

Rambles though Acorn



Mike Cook spots a grouse

Maybe I should call this column *Grumbles Through Acorn Wood* because something else has been worrying me lately. It's software that is being too helpful in installing itself. It's not so much as a problem with RISC OS as on other machines but it's creeping in. The other week I was asked to try a free internet service provider, nothing to lose?

Except once I had inserted the software CD and clicked on the icon all reference to my original provider had been wiped, and I had to spend ages reinstalling preferences and scripts to get back to my machine's original state. I know developers are convinced that once you have their software you will want no other but they are wrong. I find this practice both ignorant and cynical.

First a bit of feedback from Tarquin Mills:

"In August's 1999 Rambles in answer about Pascal it is stated that Norcroft Pascal requires Acorn C to work but it works in command line mode (like GNU compilers) without it. You only need Acorn C if you want to run it from a GUI interface."

And another bit from Ray Favre:



"In September 1999 you referred to my Wimp Programming book (which is indeed still available) but you quote a well-out-of-date URL. My current Website is http://www.argonet.co.uk/users/rayfavre/ or tel: (+44) (0)1895 444410. Many thanks for the mention."

Stuart Nundy wants to listen to the radio:



"I've been aware of the RiscTV hardware produced by Irlam for some time, but I was wondering whether you also know whether it is possible to obtain an FM radio receiver, for a Risc PC, as well? I'm not desperately interested in TV but would be in a radio card. I understand that Irlam do produce an external FM tuner that plugs into the serial port.

"The problem with this is that, firstly, I already have an external modem that uses the serial port, and I don't want to be constantly swapping leads and, secondly, the Irlam tuner does not utilise the internal sound system of the Risc PC, but requires a second pair of powered speakers. I don't really fancy more and more leads and objects extending around the computer. Ideally, therefore, I'm after an internal solution – an expansion card. Any suggestions?"



One product springs to mind DeskFM by Yellowstone, costing £59 incVAT. I reviewed this in May 1997, and it's still available. Yellowstone, tel: 01582 656000, or e-mail: sales@yellowstone.co.uk

Dave Braine is having trouble with the Net:



"I have access to the Internet via a PC. Could you tell me how I can run Acorn files, on my Risc PC 600, that I've downloaded on the PC?"



Most RISC OS files on the Web are encoded using *Spark* (SparkPlug or SparkFS) you simply copy the files onto your harddisc and drag them onto the icon. Alternatively use

Robin Hutchinson has lost something but has not looked under the bed:



"Although I am a long-term RISC OS user I am not that knowledgeable about details so please could you advise me how to reinstall *Draw*. I get a missing file message when I try to run *Draw*. The computer is a Risc PC with StrongARM upgrade and RISC OS 3.7, also a 586 co-processor. I have the discs of 3.7 but would rather not have to re-partition my harddisc."



While *Draw* has been moved in and out of ROM over the years, in version 3.7 it is in the ROM so is difficult to loose. However, there is a module that could be disabled which would give an error message. Press F12 and get into command line mode. Then type:

```
*Unplug
```

and you should get a list of disabled modules. If *Draw* is among them type:

```
*RMInsert !Draw
```

Go back to the desktop and double-click on the icon in the Apps folder should bring up the application.



ArcFixer by Paul F Johnson which is hopefully on this month's cover disk.

James Scott has acquired the reputation as an expert, now he has to live up to it:


"My Headmaster, forever at the cutting edge of technology, has just given up the pleasures of working with an Amstrad 8512. As he thinks that I am the school's computer whizz-kid, he has asked me to try to save his work. Therefore, it would do me no harm if I could succeed in recovering his *Locoscript v.1.2* text files from the Amstrad which are, obviously, stored on the 3 inch CF2 Amstrad floppy disc.

"I have an Acorn 310 with RISC OS 3 but can see no obvious way to connect the two to allow the 310 to read the Amstrad files. How do I do this? Is there an Acorn external floppy disc reader for the Amstrad disks? By the way, if it will help, I also have BBC Micro, an Amstrad PC2086/30, an Acorn 3000 and 3010 and a Cyrix 686 333+ PC."


As far as I know there is no 3in drive interface available for any Acorn product anymore – though they were available once and a reader may have one. You would need to write a software disc driver as well as make any hardware changes. A company called Officeland – based in Poole, Dorset – may be able to help e-mail: pcwusers@lds.co.uk or phone (+44/0) 1202 666155.

Robert Beech is having a problem with faxing:


"Using a Risc PC 600 and a Dynalink 56k modem supplied by Argo with David Pilling's *ArcFax* I can usually send a fax, but the failure rate when some people (not all) try to send me a fax is becoming serious. All starts well the sender gets a message saying *No acknowledgement received*. All I get is his identification on the screen and occasionally about 2 cm of fax. I have sent David Pilling a debug file but he cannot help.

"Now, I believe, in addition to your Acorn expertise, you are involved with Pace. A Pace Solo modem is not cheap, but would be worth it if it solved my problems. Would it reliably receive faxes from anywhere? Could I connect a Pace Solo in parallel with a couple of telephones and my existing modem and, if so, would voice callers hear bells and whistles or would the Solo be sufficiently selective?"


To start off with the Pace that makes modems is Pace Micro Communications, the Pace I work for is Pace Micro Technology although started by the same person they have been totally separate companies for a long time. Anyway late in August PMC went into voluntary liquidation so there is likely to be a flush of surplus modems on the market.

That aside, there can be many things affecting reception of faxes. For a start there are two classes of fax modem: Class 1 and Class 2. In fact most modems are capable of operating in both modes. The difference between them is that with Class 2 all the protocol is handled by the software in the modem whereas Class 1 has the software in the computer in control. This means that the Class 2 protocol is a fixed, rigid thing where as Class 1 can cope with all sorts of additions and extensions.

As it is the software that decides what mode to put the modem into, it is likely that you could still have the same problem with another modem. While it is most likely that this is a software issue there are some hardware things that could mess you up. For example if you have too much loading on your phone line. Each device has a REN (ring equivalent number) indicating the loading, the maximum loading for a line is four and some modems have a REN of two.

That means two phones and a modem is your limit, so connecting all that in parallel is not a goer. Even so, some modems are not happy working at the limit so you could try removing a phone or two. Another thing that messes up faxes is the call waiting system, this can also disrupt Internet connections.

There is always going to be some combination of modem and software that prevents faxes being 100% compatible. Even commercial fax machines occasionally come up with an incompatible combination. For example my Motorola modem running on my Mac won't connect to the fax machine in the *Acorn User* office. Why? No one knows. Sorry but it's an area where there are no guarantees.

Finally a nice change in the modern world of the internet and word processors, a handwritten letter from Sion Evans:


"I recently bought a StrongARM upgrade, and while I am delighted with it, when I try to access files off the floppy disc I get a disc error message.

However, I can access them from my A310. Another question is how can I access mixed format CDs such as audio CDs with video clips.

"Finally I was wondering if anyone knows of a utility to enable various sounds to be played when various actions are performed like boot up, shut down and opening windows?"


I am not sure if you are trying to access the disc files from an application. To see if the disc is okay copy the files onto your harddisc.

If that works try to use them from the application. If that fails then your application might need upgrading to cope with the StrongARM processor.

If you can't even copy them onto the hard drive it looks like the disc drive has not been put back correctly, probably the connection leads have not been pushed home. Alternatively you could have put the drive out of alignment, in which case see a dealer.

Video clips are a bit tricky, WSS does have software with various video capabilities that will allow you to play most but not all videos. Finally, there is a sound effects program on P F Johnson's Kosovo CD called *Events* (part of CC's *Audioctrl*). END



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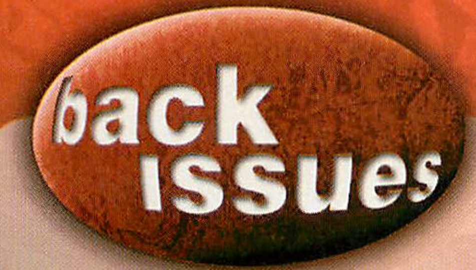
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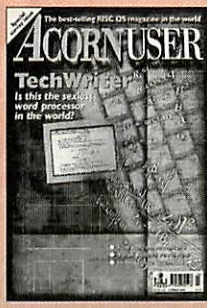
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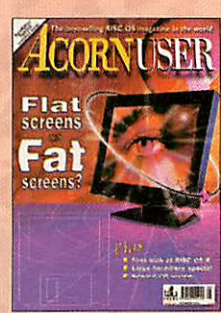
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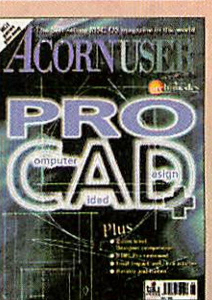
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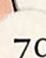
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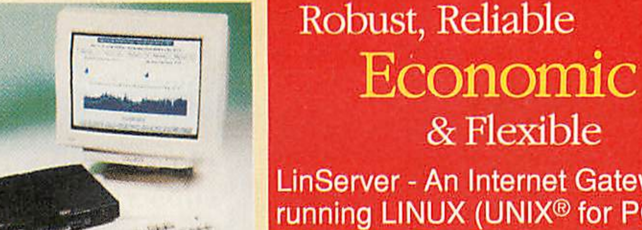
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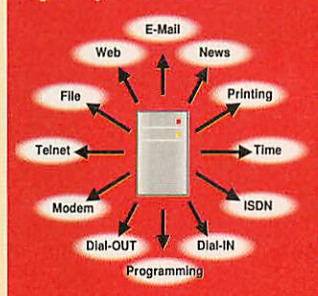
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Do you do voodoo?

In reference to your article on RiscStation's RS7500 PCI-slot capable machine, and announcements on their Website concerning Voodoo graphics cards.

An anonymous developer of drivers for 3DFX has claimed that as far as drivers go, "the Voodoo 3 2000 is the only card feasible for the RS7500 PCI slot system". This is because the Voodoo 1 and 2 are 'loop back cards' which means they run through a separate base graphics card. The Voodoo 3 2000 on the other hand is an 'all in one' base card and 3D Accelerator. The RISC OS drivers are apparently available on the Voodoo developer website.

In a separate conversation an unnamed spokesman for Creative Labs – a company famed in the PC world for sound cards, DVD players, MPEG Cards and Graphic cards – was reported to have said that "the Acorn market's size is far more extensive than I realised. To ignore it would be passing up a great marketing opportunity, although much would depend on how the PCI system development progresses, the further development of the operating system and the potential cost for driver conversion".

This is definitely food for thought as Creative is one of many companies using the NVIDIA graphic chipset – currently the PC markets Open Graphics Language Standard – and support from this area would be a major boost for the Acorn market.

This is especially true when you take into consideration that, as well known a company as 3DFX are, their reluctance to licence the Voodoo 3 chipset to other card manufacturers in the PC market has raised questions about their long term future. This in turn has seen a rise in NVIDIA's profile and on the 31 January NVIDIA announced a new generation of GPU (graphic processing unit) cards. These are due to be released by most of the major graphic manufactures by the beginning of October 1999.

A.D. Fector, by e-mail

Slayer correction

Last month we ran an article on virus killers, and one of them, *Slayer*, had a bit chopped off it's Product box. The correct e-mail address for *Slayer*'s authors is unciscy@eh.org *Dunstan Orchard*

Podules, what fun

I read in one of my game instructions that you can make a set of pedals and a steering wheel to plug into an old (but nice) A3000. One problem. I need an I/O Podule. What is an I/O Podule? Apparently without it the said pedals and steering wheel will not work.

Secondly, is it possible to do some DIY software conversion? Thirdly why won't High Street steering wheels/pedals work on an Acorn (RiscStation R7500 and so on)? Fourthly, won't someone up there at *Acorn User* please create a series with a theme of game design/ programming or maybe some Run The Riscs for the younger readers of the magazine – just like a certain Mike Cook did in the *Let's Compute!* magazine.

Kevin McMullin (13), by e-mail

An I/O podule is a card that plugs into your computer that gives you some input/output (I/O) ports that are the same as the old model B. Basically this is an 8-bit digital User Port and a 4-channel 12-bit A/D (analogue to digital) converter. These cost about £50.

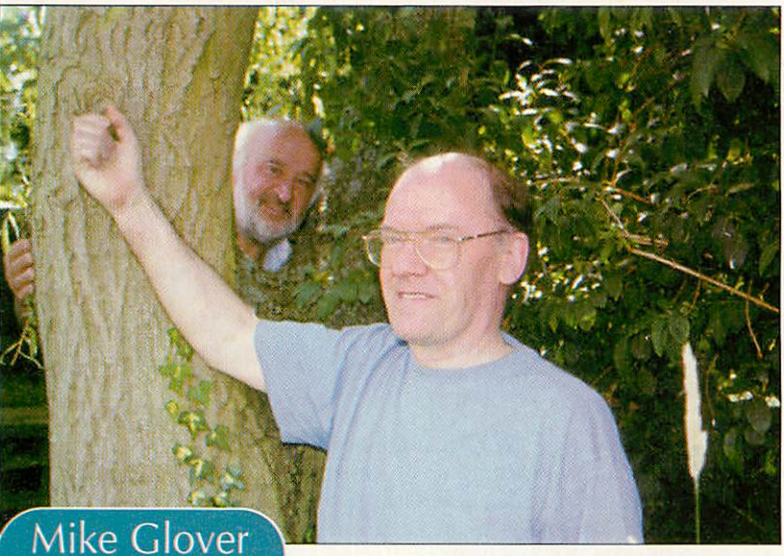
The reason you can't plug in a High Street steering wheel is that there's nowhere to plug it in. PCs have a joystick which contain a simple bit of electronics that the software knows how to drive.

So any scope for DIY? Well yes, I did an article in June '96 on how to use PC-type joysticks you can get it on the Web from http://www.doc.mmu.ac.uk/Physics/Acorn/RTR96.html however remember any software will have to know how to drive it. Another one in October '95 showed the Acorn standard way of connecting joysticks you can find that on http://www.doc.mmu.ac.uk/Physics/Acorn/ RTR95.html

I do include some 'low tech' construction articles from time to time although I haven't recently, so I will think about a few. Hope that helps.

Mike Cook





Mike Glover and Bob Pollard

A person can fool you into thinking that they're a nice guy if you meet them at a show, but it's hard to keep up the pretence when you spend four hours in the same car. I spent four hours driving with Mike Glover and I can confirm he is officially a nice guy. This interview is a tale of two cities, Stamford and Holmes Chapel, and two partners in Icon Technology: Mike Glover and Bob Pollard.

'It's funny – people think of DTP as making small documents, no one thinks of it on a novel scale.'

Most people will admit to doing a bit of DIY and many have a few tools or even a small workshop, but what you don't expect is to find a full tool shop complete with wood-cutting machines capable of making window frames. Mike and his wife Angela are renovating their 'country cottage'. This not just painting, this is fitting windows, taking down walls and roofs.

The first thing after the tour I am shown is the office, and then *EasiWriter*, which I have been finding out does exactly what it says on the box.

'We started on the Mac, with *MacAuthor*,' Mike explains. 'Douglas Adams used it to write *Dirk Gently's Holistic Detective Agency*, and was probably the first author to typeset his own novel. It's funny – people think of DTP as making small documents, no one thinks of it on a novel scale. These days we are just on the Acorn platform but another platform as well would be fun ... perhaps when we've made more money. Both *EasiWriter* and *MacAuthor* are different from other programs because they are written from a writer's viewpoint, not a programmer's.'

Mike met Bob through a mutual acquaintance when Bob was working for ICL. Bob lives in Holmes Chapel, and Mike gives me a lift over to Bob's house, telling me what he's done in previous lives on the way.

'I have been to the same party as Bill Gates, back in 1979. Gates and Scully were wandering around saying hello to everyone. In those days I was living in Brazil. It was the usual story, I went for two years and ended up staying for nine. I was a regional manager for Dunlop. I looked after the whole of South America.'

Mike tells me that he will show me what his factories used to make when we pass the next electrical transmission line. Another hour later we eventually see some; the black anti-vibrators which are needed when you conduct high voltage electricity. Without them the vibrations caused by conducting a high voltage alternating current would cause the conductors to fail and fall down.

We eventually arrive at Bob's house: 'Bob is the chief programmer and I'm the other one', jokes Mike.

'I worked for ICL straight from University,' says Bob, 'must have been for about 20 years. In those days computers were room-sized.'

'Its your fault we got into the Acorn market,' Mike reminds him.

'Acorn has been my hobby since the BBC Micro came out,' agrees Bob. 'I was actually working in the factory where they were made. Unfortunately no discount, but it was interesting.'

'What also happened was that someone at Acorn was using *MacAuthor*. So Acorn came to us and commissioned us to to do something with the functionality of *MacAuthor* and *Formulator* – something Bob wrote in a year by himself which just did mathematical formulae. As with all good software developers we were a bit late on delivering so Acorn asked us to drop the maths bit and come out with the word processor part, then get on with *TechWriter*.

'Then Acorn decided that they really did not want to be in the business of publishing their own software, so they gave it back to us – which was nice. We have done other stuff for Acorn like the word processor in the Network Computer.'

Icon would like to make more money so it could employ some people to program for them. It's Bob who does it all at the moment.

'I program in C++, we have been doing C++ from the start...'

'Now don't be modest,' butts in Mike.

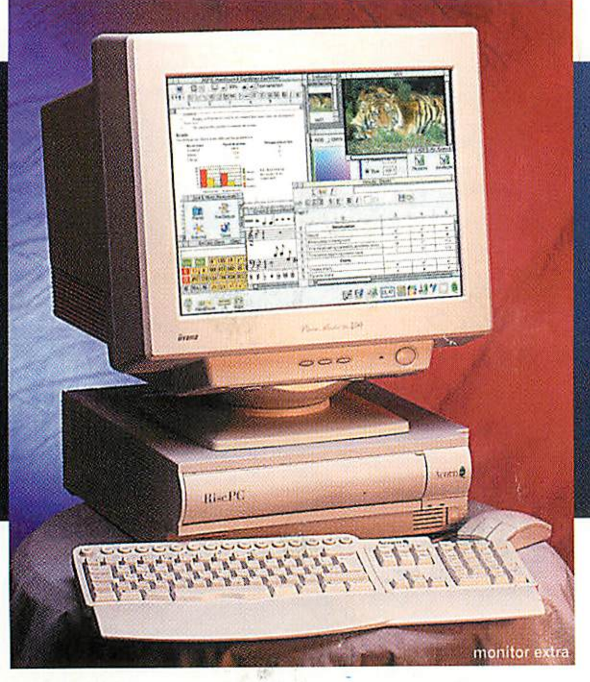
'On the Mac,' continues Bob, 'we used *Object Pascal*. We needed something object-oriented on the Acorn so I thought let's go for C++, but there was no compiler so I had write my own. Five years later Acorn got around to doing it.'

The interview turns to chatting and I find out that Bob the hoarder still has his original Sinclair calculator. Bob and Mike chat a little about business and I get see how well they get on as a team. Then it's back to Stamford with Mike giving me a classical music lesson on the way.

That 'nice guy' image Mike projects at shows? It's genuine. Trust me.

Jill Regan

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